

长安大学 ESI 月报

(2019 年 7 月)

数据统计：图书馆信息部

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长安大学图书馆

2019 年 7 月 11 日，最新一期 ESI 数据更新发表，统计数据覆盖时间范围为 10 年 4 个月（2009.1.1-2019.4.30），与上一期 ESI 数据（5 月）对比，发现有 5 所新进入 ESI 前 1% 的大陆高校：西华师范大学（化学）、河北科技大学（工程学）、江西科技师范大学（化学）、华东交通大学（工程学）、桂林医学院（临床医学）。长安大学在本次统计数据覆盖时间范围内的表现如下：

一. 长安大学 ESI 高被引论文情况

在本次 ESI 统计数据覆盖时间范围内，全球位列 ESI 高水平研究机构总数 5957 所，比上期（2019 年 5 月）增加 93 所（上期 5864 所），我校 ESI 排名 2907 位（上期 2951 位）。高被引论文 60 篇（见表 1），比上期（2019 年 5 月更新数据为 53 篇）增加 7 篇，其中作为合作单位发表的高被引论文有 15 篇（见表 2）；本期我校没有 ESI 热点论文，而上期热点论文为 8 篇。

表 1 长安大学 ESI 高被引论文简况 (按 ESI 被引频次排序)

序号	论文名称	WOS 号	作者	来源期刊	ESI 学科	ESI 被引次数
1	COMBUSTION AND PERFORMANCE EVALUATION OF A DIESEL ENGINE FUELED WITH BIODIESEL PRODUCED FROM SOYBEAN CRUDE OIL	000269711300022	QI, DH;GENG, LM;CHEN, H;BIAN, YZ;LIU, J;REN, XC	RENEWABLE ENERGY 34 (12): 2706-2713 DEC 2009	ENGINEERING	170
2	EXPERIMENTAL STUDIES ON THE COMBUSTION CHARACTERISTICS AND PERFORMANCE OF A DIRECT INJECTION ENGINE FUELED WITH BIODIESEL/DIESEL BLENDS	000281339700070	QI, DH;CHEN, H;GENG, LM;BIAN, YZ	ENERG CONV MANAGE 51 (12): 2985-2992 DEC 2010	ENGINEERING	160
3	PERFORMANCE AND COMBUSTION CHARACTERISTICS OF BIODIESEL-DIESEL-METHANOL BLEND FUELLED ENGINE	000274943400022	QI, DH;CHEN, H;GENG, LM;BIAN, YZ;REN, XC	APPL ENERG 87 (5): 1679-1686 MAY 2010	ENGINEERING	124
4	MICROWAVE-ASSISTED IN SITU SYNTHESIS OF REDUCED GRAPHENE OXIDE-BIVO4 COMPOSITE PHOTOCATALYSTS AND THEIR ENHANCED PHOTOCATALYTIC PERFORMANCE FOR THE DEGRADATION OF CIPROFLOXACIN	000317878400014	YAN, Y;SUN, SF;SONG, Y;YAN, X;GUAN, WS;LIU, XL;SHI, WD	J HAZARD MATER 250: 106-114 APR 15 2013	ENGINEERING	107
5	EVALUATION OF SHALLOW GROUNDWATER CONTAMINATION AND ASSOCIATED HUMAN HEALTH RISK IN AN ALLUVIAL PLAIN IMPACTED BY AGRICULTURAL AND INDUSTRIAL ACTIVITIES, MID-WEST CHINA	000381997600002	WU, JH;SUN, ZC	EXPO HEALTH 8 (3): 311-329 SEP 2016	ENVIRONMENT/EC OLOGY	99
6	BUILDING A NEW AND SUSTAINABLE SILK ROAD ECONOMIC BELT	000362903400023	LI, PY;QIAN, H;HOWARD, KWF;WU, JH	ENVIRON EARTH SCI 74 (10):	ENVIRONMENT/EC OLOGY	99

				7267-7270 NOV 2015		
7	MICROWAVE SYNTHESIS OF A NOVEL MAGNETIC IMPRINTED TiO ₂ PHOTOCATALYST WITH EXCELLENT TRANSPARENCY FOR SELECTIVE PHOTODEGRADATION OF ENROFLOXACIN HYDROCHLORIDE RESIDUES SOLUTION	000337554100003	LU, ZY;CHEN, F;HE, M;SONG, MS;MA, ZF;SHI, WD;YAN, YS;LAN, JZ;LI, F;XIAO, P	CHEM ENG J 249: 15-26 AUG 1 2014	ENGINEERING	92
8	URANIUM AND MOLYBDENUM ISOTOPE EVIDENCE FOR AN EPISODE OF WIDESPREAD OCEAN OXYGENATION DURING THE LATE EDIACARAN PERIOD	000352192100010	KENDALL, B;KOMIYA, T;LYONS, TW;BATES, SM;GORDON, GW;ROMANIELLO, SJ;JIANG, GQ;CREASER, RA;XIAO, SH;MCFADDEN, K;SAWAKI, Y;TAHATA, M;SHU, DG;HAN, J;LI, Y;CHU, XL;ANBAR, AD	GEOCHIM COSMOCHIM ACTA 156: 173-193 MAY 1 2015	GEOSCIENCES	88
9	HYDROGEOCHEMICAL CHARACTERIZATION OF GROUNDWATER IN AND AROUND A WASTEWATER IRRIGATED FOREST IN THE SOUTHEASTERN EDGE OF THE TENGGER DESERT, NORTHWEST CHINA	000381997600003	LI, PY;WU, JH;QIAN, H;ZHANG, YT;YANG, NA;JING, LJ;YU, PY	EXPO HEALTH 8 (3): 331-348 SEP 2016	ENVIRONMENT/EC OLOGY	69
10	HYDROCHEMICAL APPRAISAL OF GROUNDWATER QUALITY FOR DRINKING AND IRRIGATION PURPOSES AND THE MAJOR INFLUENCING FACTORS: A CASE STUDY IN AND AROUND HUA COUNTY, CHINA	000369322200015	LI, PY;WU, JH;QIAN, H	ARAB J GEOSCI 9 (1): - JAN 2016	GEOSCIENCES	58

11	APPRAISING GROUNDWATER QUALITY AND HEALTH RISKS FROM CONTAMINATION IN A SEMIARID REGION OF NORTHWEST CHINA	000381997600005	LI, PY;LI, XY;MENG, XY;LI, MN;ZHANG, YT	EXPO HEALTH 8 (3): 361-379 SEP 2016	ENVIRONMENT/EC OLOGY	58
12	FOUR STAGES SYMMETRIC TWO-STEP P-STABLE METHOD WITH VANISHED PHASE-LAG AND ITS FIRST, SECOND, THIRD AND FOURTH DERIVATIVES	000378971700008	HUI, F;SIMOS, TE	APPL COMPUT MATH 15 (2): 220-238 2016	MATHEMATICS	58
13	A HIGH-ORDER TWO-STEP PHASE-FITTED METHOD FOR THE NUMERICAL SOLUTION OF THE SCHRODINGER EQUATION	000387090000085	ZHANG, W;SIMOS, TE	MEDITERR J MATH 13 (6): 5177-5194 DEC 2016	MATHEMATICS	57
14	INVESTIGATION PROGRESSES AND APPLICATIONS OF FRACTIONAL DERIVATIVE MODEL IN GEOTECHNICAL ENGINEERING	000376141900001	LAI, JX;MAO, S;QIU, JL;FAN, HB;ZHANG, Q;HU, ZN;CHEN, JX	MATH PROBL ENG : - 2016	ENGINEERING	51
15	PROGRESS, OPPORTUNITIES, AND KEY FIELDS FOR GROUNDWATER QUALITY RESEARCH UNDER THE IMPACTS OF HUMAN ACTIVITIES IN CHINA WITH A SPECIAL FOCUS ON WESTERN CHINA	000401566600006	LI, PY;TIAN, R;XUE, CY;WU, JH	ENVIRON SCI POLLUT RES 24 (15): 13224-13234 MAY 2017	ENVIRONMENT/EC OLOGY	49
16	VIBRATION RESPONSE CHARACTERISTICS OF THE CROSS TUNNEL STRUCTURE	000379610300001	LAI, JX;WANG, KY;QIU, JL;NIU, FY;WANG, JB;CHEN, JX	SHOCK VIBRATION : - 2016	ENGINEERING	48
17	SINGLE IMAGE SUPER-RESOLUTION VIA LOCALLY REGULARIZED ANCHORED NEIGHBORHOOD REGRESSION AND NONLOCAL MEANS	000391475200002	JIANG, JJ;MA, X;CHEN, C;LU, T;WANG, ZY;MA, JY	IEEE TRANS MULTIMEDIA 19 (1): 15-26 JAN 2017	COMPUTER SCIENCE	40
18	THE CATASTROPHIC LANDSIDE IN MAOXIAN COUNTY, SICHUAN, SW CHINA, ON JUNE 24, 2017	000415325500026	QIU, JL;WANG, XL;HE, SY;LIU, HQ;LAI, JX;WANG,	NATURAL HAZARDS 89 (3):	GEOSCIENCES	39

			LX	1485-1493 DEC 2017		
19	CHARACTERISTICS OF SEISMIC DISASTERS AND ASEISMIC MEASURES OF TUNNELS IN WENCHUAN EARTHQUAKE	000393021400036	LAI, JX;HE, SY;QIU, JL;CHEN, JX;WANG, LX;WANG, K;WANG, JB	ENVIRON EARTH SCI 76 (2): - JAN 2017	ENVIRONMENT/EC OLOGY	38
20	MOF-DERIVED POROUS N-CO ₃ O ₄ @N-C NANODODECAHEDRA WRAPPED WITH REDUCED GRAPHENE OXIDE AS A HIGH CAPACITY CATHODE FOR LITHIUM-SULFUR BATTERIES	000424466300041	XU, J;ZHANG, WX;CHEN, Y;FAN, HB;SU, DW;WANG, GX	J MATER CHEM A 6 (6): 2797-2807 FEB 14 2018	MATERIALS SCIENCE	37
21	LANDSLIDE SUSCEPTIBILITY MODELLING USING GIS-BASED MACHINE LEARNING TECHNIQUES FOR CHONGREN COUNTY, JIANGXI PROVINCE, CHINA	000428194000110	CHEN, W;PENG, JB;HONG, HY;SHAHABI, H;PRADHAN, B;LIU, JZ;ZHU, AX;PEI, XJ;DUAN, Z	SCI TOTAL ENVIR 626: 1121-1135 JUN 1 2018	ENVIRONMENT/EC OLOGY	34
22	INVESTIGATING THE LONG-TERM SETTLEMENT OF A TUNNEL BUILT OVER IMPROVED LOESSIAL FOUNDATION SOIL USING JET GROUTING TECHNIQUE	000441684700001	QIU, JL;LIU, HQ;LAI, JX;LAI, HP;CHEN, JX;WANG, K	J PERFORM CONSTR FACIL 32 (5): - OCT 2018	ENGINEERING	33
23	GIS-BASED LANDSLIDE SUSCEPTIBILITY MODELLING: A COMPARATIVE ASSESSMENT OF KERNEL LOGISTIC REGRESSION, NAIVE-BAYES TREE, AND ALTERNATING DECISION TREE MODELS	000418899200046	CHEN, W;XIE, XS;PENG, JB;WANG, JL;DUAN, Z;HONG, HY	GEOMAT NAT HAZARDS RISK 8 (2): 950-973 2017	GEOSCIENCES	33
24	MESOPOROUS MANGANESE OXIDE WITH LARGE SPECIFIC SURFACE AREA FOR HIGH-PERFORMANCE ASYMMETRIC SUPERCAPACITOR WITH ENHANCED CYCLING	000406138400005	GU, JM;FAN, XY;LIU, X;LI, SH;WANG, Z;TANG, SF;YUAN, DL	CHEM ENG J 324: 35-43 SEP 15 2017	ENGINEERING	30

	STABILITY					
25	A STATE-OF-THE-ART REVIEW OF SUSTAINABLE ENERGY BASED FREEZE PROOF TECHNOLOGY FOR COLD-REGION TUNNELS IN CHINA	000418574800110	LAI, JX;WANG, XL;QIU, JL;ZHANG, GZ;CHEN, JX;XIE, YL;LUO, YB	RENEW SUSTAIN ENERGY REV 82: 3554-3569 PART 3 FEB 2018	ENGINEERING	30
26	RELATIVE VELOCITY DIFFERENCE MODEL FOR THE CAR-FOLLOWING THEORY	000424037200001	YU, SW;TANG, JJ;XIN, Q	NONLINEAR DYNAMICS 91 (3): 1415-1428 FEB 2018	ENGINEERING	29
27	FLUID AND METAL SOURCES OF THE WENQUAN PORPHYRY MOLYBDENUM DEPOSIT, WESTERN QINLING, NW CHINA	000404064900026	QIU, KF;MARSH, E;YU, HC;PFAFF, K;GULBRANSEN, C;GOU, ZY;LI, N	ORE GEOL REV 86: 459-473 JUN 2017	GEOSCIENCES	29
28	A NEW HIGH ALGEBRAIC ORDER EFFICIENT FINITE DIFFERENCE METHOD FOR THE SOLUTION OF THE SCHRODINGER EQUATION	000416115500029	DONG, M;SIMOS, TE	FILOMAT 31 (15): 4999-5012 2017	MATHEMATICS	29
29	GIS-BASED LANDSLIDE SUSCEPTIBILITY EVALUATION USING A NOVEL HYBRID INTEGRATION APPROACH OF BIVARIATE STATISTICAL BASED RANDOM FOREST METHOD	000430031800015	CHEN, W;XIE, XS;PENG, JB;SHAHABI, H;HONG, HY;BUI, DT;DUAN, Z;LI, SJ;ZHU, AX	CATENA 164: 135-149 MAY 2018	AGRICULTURAL SCIENCES	27
30	RESPONSE CHARACTERISTICS AND PREVENTIONS FOR SEISMIC SUBSIDENCE OF LOESS IN NORTHWEST CHINA	000433913500032	QIU, JL;WANG, XL;LAI, JX;ZHANG, Q;WANG, JB	NATURAL HAZARDS 92 (3): 1909-1935 JUL 2018	GEOSCIENCES	26
31	GLOBAL ASYMPTOTIC STABILITY OF CNNs WITH IMPULSES AND MULTI-PROPORTIONAL DELAYS	000370234600010	SONG, XL;ZHAO, P;XING, ZW;PENG, JG	MATH METH APPL SCI 39 (4): 722-733 MAR 2016	MATHEMATICS	26

32	DISTRIBUTION AND CHARACTERISTICS OF LANDSLIDE IN LOESS PLATEAU: A CASE STUDY IN SHAANXI PROVINCE	000430028000010	ZHUANG, JQ;PENG, JB;WANG, GH;JAVED, I;WANG, Y;LI, W	ENG GEOL 236: 89-96 SP. ISS. SI MAR 26 2018	GEOSCIENCES	20
33	IMPACTS ANALYSIS OF CAR FOLLOWING MODELS CONSIDERING VARIABLE VEHICULAR GAP POLICIES	000430027500031	XIN, Q;YANG, N;FU, R;YU, SW;SHI, ZK	PHYSICA A 501: 338-355 JUL 1 2018	PHYSICS	20
34	A STUDY ON THE MECHANICAL BEHAVIOR AND STATISTICAL DAMAGE CONSTITUTIVE MODEL OF SANDSTONE	000443205500012	WANG, JB;SONG, ZP;ZHAO, BY;LIU, XR;LIU, J;LAI, JX	ARAB J SCI ENG 43 (10): 5179-5192 OCT 2018	ENGINEERING	20
35	SIMPLE METHOD TO PREDICT GROUND DISPLACEMENTS CAUSED BY INSTALLING HORIZONTAL JET-GROUTING COLUMNS	000424800500001	WANG, ZF;SHEN, JS;CHENG, WC	MATH PROBL ENG : - 2018	ENGINEERING	19
36	COO AND G-C3N4 COMPLEMENT EACH OTHER FOR HIGHLY EFFICIENT OVERALL WATER SPLITTING UNDER VISIBLE LIGHT	000425476800043	GUO, F;SHI, WL;ZHU, C;LI, H;KANG, ZH	APPL CATAL B-ENVIRON 226: 412-420 JUN 15 2018	CHEMISTRY	19
37	INVESTIGATION INTO GEOHAZARDS DURING URBANIZATION PROCESS OF XIAN, CHINA	000433913500033	WANG, ZF;CHENG, WC;WANG, YQ	NATURAL HAZARDS 92 (3): 1937-1953 JUL 2018	GEOSCIENCES	17
38	EXTREME DEFORMATION CHARACTERISTICS AND COUNTERMEASURES FOR A TUNNEL IN DIFFICULT GROUNDS IN SOUTHERN SHAANXI, CHINA	000446842900001	LAI, JX;WANG, XL;QIU, JL;CHEN, JX;HU, ZN;WANG, H	ENVIRON EARTH SCI 77 (19): - OCT 2018	ENVIRONMENT/EC OLOGY	17
39	PRINCIPAL STRESS ROTATION UNDER BIDIRECTIONAL SIMPLE SHEAR LOADINGS	000431052600013	LI, Y;YANG, YM;YU, HS;ROBERTS, G	KSCE J CIV ENG 22 (5): 1651-1660 MAY 2018	ENGINEERING	16
40	AN ALGORITHM FOR TRAFFIC FLOW PREDICTION	000451529600043	LUO, XL;NIU, LY;ZHANG,	KSCE J CIV ENG 22	ENGINEERING	15

	BASED ON IMPROVED SARIMA AND GA		SR	(10): 4107-4115 OCT 2018		
41	NUMERICAL INVESTIGATION OF PARTICLE CONCENTRATION DISTRIBUTION CHARACTERISTICS IN TWIN-TUNNEL COMPLEMENTARY VENTILATION SYSTEM	000439718300001	REN, R;XU, SS;REN, ZD;ZHANG, SZ;WANG, H;WANG, XL;HE, SY	MATH PROBL ENG : - 2018	ENGINEERING	14
42	CRACKING AND FAILURE IN ROCK SPECIMEN CONTAINING COMBINED FLAW AND HOLE UNDER UNIAXIAL COMPRESSION	000432056100001	FAN, X;CHEN, R;LIN, H;LAI, HP;ZHANG, CY;ZHAO, QH	ADV CIV ENG : - 2018	ENGINEERING	14
43	DISPLACEMENT AND STRESS CHARACTERISTICS OF TUNNEL FOUNDATION IN COLLAPSIBLE LOESS GROUND REINFORCED BY JET GROUTING COLUMNS	000446014000001	LI, YY;XU, SS;LIU, HQ;MA, EL;WANG, LX	ADV CIV ENG : - 2018	ENGINEERING	14
44	GEOCHEMISTRY, HYDRAULIC CONNECTIVITY AND QUALITY APPRAISAL OF MULTILAYERED GROUNDWATER IN THE HONGDUNZI COAL MINE, NORTHWEST CHINA	000431882400002	LI, PY;WU, JH;TIAN, R;HE, S;HE, XD;XUE, CY;ZHANG, K	MINE WATER ENVIRON 37 (2): 222-237 SP. ISS. SI JUN 2018	ENVIRONMENT/EC OLOGY	13
45	NATURE AND ORIGIN OF TRIASSIC IGNEOUS ACTIVITY IN THE WESTERN QINLING OROGEN: THE WENQUAN COMPOSITE PLUTON EXAMPLE	000418932900006	QIU, KF;YU, HC;GOU, ZY;LIANG, ZL;ZHANG, JL;ZHU, R	INT GEOL REV 60 (2): 242-266 2018	GEOSCIENCES	11
46	PARTICLE SIZE DISTRIBUTION EFFECTS ON DEFORMATION PROPERTIES OF GRADED AGGREGATE BASE UNDER CYCLIC LOADING	000466179000001	LIN, H;WANG, H;FAN, X;CAO, P;ZHOU, KF	EUR J ENVIRON CIV ENG 23 (3): 269-286 MAR 4 2019	ENGINEERING	11
47	STRUCTURAL RESPONSE OF THE METRO TUNNEL UNDER LOCAL DYNAMIC WATER ENVIRONMENT	000459674700001	QIU, JL;QIN, YW;LAI, JX;WANG, K;NIU,	GEOFLUIDS : - 2019	GEOSCIENCES	11

	IN LOESS STRATA		FY;WANG, H;ZHANG, GL			
48	STATISTICAL ANALYSIS OF FIRE ACCIDENTS IN CHINESE HIGHWAY TUNNELS 2000-2016	000454963800039	REN, R;ZHOU, H;HU, Z;HE, SY;WANG, XL	TUNN UNDERGR SPACE TECHNOL 83: 452-460 JAN 2019	ENGINEERING	9
49	REVIEW OF THE FLAME RETARDANCY ON HIGHWAY TUNNEL ASPHALT PAVEMENT	000457659600044	QIU, JL;YANG, T;WANG, XL;WANG, LX;ZHANG, GL	CONSTR BUILD MATER 195: 468-482 JAN 20 2019	MATERIALS SCIENCE	7
50	A NEW SOIL-WATER CHARACTERISTIC CURVE MODEL FOR UNSATURATED LOESS BASED ON WETTING-INDUCED PORE DEFORMATION	000466352700001	ZHANG, YW;SONG, ZP;WENG, XL;XIE, YL	GEOFLUIDS : - 2019	GEOSCIENCES	6
51	METHANE EXPLOSION ACCIDENTS OF TUNNELS IN SW CHINA	000456347600001	HE, SY;SU, LJ;FAN, HB;REN, R	GEOMAT NAT HAZARDS RISK 10 (1): 667-677 JAN 1 2019	GEOSCIENCES	6
52	TYPHOON TRIGGERED OPERATION TUNNEL DEBRIS FLOW DISASTER IN COASTAL AREAS OF SE CHINA	000455439200001	REN, R;YU, DQ;WANG, LX;WANG, K;WANG, H;HE, SY	GEOMAT NAT HAZARDS RISK 10 (1): 562-575 JAN 1 2019	GEOSCIENCES	6
53	NUMERICAL ANALYSIS OF THE COMPRESSIVE AND SHEAR FAILURE BEHAVIOR OF ROCK CONTAINING MULTI-INTERMITTENT JOINTS	000455001900003	FAN, X;LIN, H;LAI, HP;CAO, RH;LIU, J	C R MEC 347 (1): 33-48 JAN 2019	ENGINEERING	6
54	DYNAMIC FAILURE MODE AND DYNAMIC RESPONSE OF HIGH SLOPE USING SHAKING TABLE TEST	000464817300001	ZHOU, ZJ;REN, CN;XU, GJ;ZHAN, HC;LIU, T	SHOCK VIBRATION : - 2019	ENGINEERING	6
55	STATISTICAL ANALYSIS OF INFLUENCE OF COVER	000458959700001	HU, Z;DU, K;LAI, JX;XIE, YL	ADV CIV ENG : -	ENGINEERING	5

	DEPTH ON LOESS TUNNEL DEFORMATION IN NW CHINA			2019		
56	FREE VIBRATION OF NONLOCAL TIMOSHENKO BEAMS MADE OF FUNCTIONALLY GRADED MATERIALS BY SYMPLECTIC METHOD	000457206000020	ZHANG, K;GE, MH;ZHAO, C;DENG, ZC;XU, XJ	COMPOS PART B-ENG 156: 174-184 JAN 1 2019	MATERIALS SCIENCE	5
57	PUBLIC ACCEPTANCE OF FULLY AUTOMATED DRIVING: EFFECTS OF SOCIAL TRUST AND RISK/BENEFIT PERCEPTIONS	000458171100005	LIU, P;YANG, R;XU, ZG	RISK ANAL 39 (2): 326-341 SP. ISS. SI FEB 2019	SOCIAL SCIENCES, GENERAL	5
58	HOW SAFE IS SAFE ENOUGH FOR SELF-DRIVING VEHICLES?	000458171100004	LIU, P;YANG, R;XU, ZG	RISK ANAL 39 (2): 315-325 SP. ISS. SI FEB 2019	SOCIAL SCIENCES, GENERAL	4
59	MULTI-CRITERIA USER EQUILIBRIUM MODEL CONSIDERING TRAVEL TIME, TRAVEL TIME RELIABILITY AND DISTANCE	000459368100002	SUN, C;CHENG, L;ZHU, SL;HAN, F;CHU, ZM	TRANSP RES PT D-TRANSP ENVIRO 66: 3-12 SP. ISS. SI JAN 2019	SOCIAL SCIENCES, GENERAL	4
60	NEW MULTIPLE STAGES TWO-STEP COMPLETE IN PHASE ALGORITHM WITH IMPROVED CHARACTERISTICS FOR SECOND ORDER INITIAL/BOUNDARY VALUE PROBLEMS	000458139300005	WANG, GP;SIMOS, TE	J MATH CHEM 57 (2): 494-515 FEB 2019	CHEMISTRY	3

表 2 长安大学作为合作单位发表的 ESI 高被引论文

序号	论文名称	WOS 号	作者	来源期刊	ESI 学科	ESI 被引次数
1	MICROWAVE-ASSISTED IN SITU SYNTHESIS OF REDUCED GRAPHENE OXIDE-BIVO4 COMPOSITE PHOTOCATALYSTS AND THEIR ENHANCED PHOTOCATALYTIC PERFORMANCE FOR THE DEGRADATION OF CIPROFLOXACIN	000317878400014	YAN, Y;SUN, SF;SONG, Y;YAN, X; GUAN, WS (我校) ;LIU, XL;SHI, WD	J HAZARD MATER 250: 106-114 APR 15 2013	ENGINEERING	107
2	MICROWAVE SYNTHESIS OF A NOVEL MAGNETIC IMPRINTED TIO2 PHOTOCATALYST WITH EXCELLENT TRANSPARENCY FOR SELECTIVE PHOTODEGRADATION OF ENROFLOXACIN HYDROCHLORIDE RESIDUES SOLUTION	000337554100003	LU, ZY; CHEN, F (我校) ;HE, M;SONG, MS;MA, ZF;SHI, WD;YAN, YS;LAN, JZ;LI, F;XIAO, P	CHEM ENG J 249: 15-26 AUG 1 2014	ENGINEERING	92
3	URANIUM AND MOLYBDENUM ISOTOPE EVIDENCE FOR AN EPISODE OF WIDESPREAD OCEAN OXYGENATION DURING THE LATE EDIACARAN PERIOD	000352192100010	KENDALL, B;KOMIYA, T;LYONS, TW;BATES, SM;GORDON, GW;ROMANIELLO, SJ;JIANG, GQ;CREASER, RA;XIAO, SH;MCFADDEN, K;SAWAKI, Y;TAHATA, M;SHU, DG;HAN, J; LI, Y (Li Yong, 我校) ;CHU, XL;ANBAR, AD	GEOCHIM COSMOCHIM ACTA 156: 173-193 MAY 1 2015	GEOSCIENCES	88
4	MOF-DERIVED POROUS N-CO3O4@N-C NANODODECAHEDRA WRAPPED WITH REDUCED GRAPHENE OXIDE AS A HIGH CAPACITY	000424466300041	XU, J;ZHANG, WX (Zhang Wenxue, 我校) ;CHEN, Y;FAN, HB;SU, DW;WANG,	J MATER CHEM A 6 (6): 2797-2807 FEB 14 2018	MATERIALS SCIENCE	37

	CATHODE FOR LITHIUM-SULFUR BATTERIES		GX			
5	LANDSLIDE SUSCEPTIBILITY MODELLING USING GIS-BASED MACHINE LEARNING TECHNIQUES FOR CHONGREN COUNTY, JIANGXI PROVINCE, CHINA	000428194000110	CHEN, W;PENG, JB (Peng, Jianbing, 我校);HONG, HY;SHAHABI, H;PRADHAN, B;LIU, JZ;ZHU, AX;PEI, XJ;DUAN, Z	SCI TOTAL ENVIR 626: 1121-1135 JUN 1 2018	ENVIRONMENT/EC OLOGY	34
6	GIS-BASED LANDSLIDE SUSCEPTIBILITY MODELLING: A COMPARATIVE ASSESSMENT OF KERNEL LOGISTIC REGRESSION, NAIVE-BAYES TREE, AND ALTERNATING DECISION TREE MODELS	000418899200046	CHEN, W;XIE, XS;PENG, JB (Peng, Jianbing, 我校);WANG, JL;DUAN, Z;HONG, HY	GEOMAT NAT HAZARDS RISK 8 (2): 950-973 2017	GEOSCIENCES	33
7	MESOPOROUS MANGANESE OXIDE WITH LARGE SPECIFIC SURFACE AREA FOR HIGH-PERFORMANCE ASYMMETRIC SUPERCAPACITOR WITH ENHANCED CYCLING STABILITY	000406138400005	GU, JM;FAN, XY (Fan, Xiaoyong, 我校);LIU, X;LI, SH;WANG, Z;TANG, SF;YUAN, DL	CHEM ENG J 324: 35-43 SEP 15 2017	ENGINEERING	30
8	GIS-BASED LANDSLIDE SUSCEPTIBILITY EVALUATION USING A NOVEL HYBRID INTEGRATION APPROACH OF BIVARIATE STATISTICAL BASED RANDOM FOREST METHOD	000430031800015	CHEN, W;XIE, XS;PENG, JB (我校);SHAHABI, H;HONG, HY;BUI, DT;DUAN, Z;LI, SJ;ZHU, AX	CATENA 164: 135-149 MAY 2018	AGRICULTURAL SCIENCES	27
9	A STUDY ON THE MECHANICAL BEHAVIOR AND STATISTICAL DAMAGE CONSTITUTIVE MODEL OF SANDSTONE	000443205500012	WANG, JB;SONG, ZP;ZHAO, BY;LIU, XR;LIU, J;LAI, JX (我校)	ARAB J SCI ENG 43 (10): 5179-5192 OCT 2018	ENGINEERING	20
10	PARTICLE SIZE DISTRIBUTION EFFECTS ON DEFORMATION PROPERTIES OF GRADED	000466179000001	LIN, H;WANG, H;FAN, X (Fan, Xiang, 我校);CAO,	EUR J ENVIRON CIV ENG 23 (3): 269-286	ENGINEERING	11

	AGGREGATE BASE UNDER CYCLIC LOADING		P;ZHOU, KF	MAR 4 2019		
11	A NEW SOIL-WATER CHARACTERISTIC CURVE MODEL FOR UNSATURATED LOESS BASED ON WETTING-INDUCED PORE DEFORMATION	000466352700001	ZHANG, YW;SONG, ZP;WENG, XL (Weng, Xiaolin, 我校);XIE, YL	GEOFLUIDS : - 2019	GEOSCIENCES	6
12	FREE VIBRATION OF NONLOCAL TIMOSHENKO BEAMS MADE OF FUNCTIONALLY GRADED MATERIALS BY SYMPLECTIC METHOD	000457206000020	ZHANG, K;GE, MH;ZHAO, C;DENG, ZC;XU, XJ (Xu, Xiao-Jian, 我校)	COMPOS PART B-ENG 156: 174-184 JAN 1 2019	MATERIALS SCIENCE	5
13	PUBLIC ACCEPTANCE OF FULLY AUTOMATED DRIVING: EFFECTS OF SOCIAL TRUST AND RISK/BENEFIT PERCEPTIONS	000458171100005	LIU, P;YANG, R;XU, ZG (Xu, Zhigang, 我校)	RISK ANAL 39 (2): 326-341 SP. ISS. SI FEB 2019	SOCIAL SCIENCES, GENERAL	5
14	HOW SAFE IS SAFE ENOUGH FOR SELF-DRIVING VEHICLES?	000458171100004	LIU, P;YANG, R;XU, ZG (Xu, Zhigang, 我校)	RISK ANAL 39 (2): 315-325 SP. ISS. SI FEB 2019	SOCIAL SCIENCES, GENERAL	4
15	MULTI-CRITERIA USER EQUILIBRIUM MODEL CONSIDERING TRAVEL TIME, TRAVEL TIME RELIABILITY AND DISTANCE	000459368100002	SUN, C;CHENG, L;ZHU, SL;HAN, F (Han, Fei, 我校);CHU, ZM	TRANSP RES PT D-TRANSP ENVIRO 66: 3-12 SP. ISS. SI JAN 2019	SOCIAL SCIENCES, GENERAL	4

60 篇高被引论文的分布院系为：公路学院 26 篇，位居首位，比上期增加 3 篇，近 3 期高被引论文呈增长趋势；环境科学与工程学院 10 篇，其高被引论文数量近 4 期一直处于稳定状态；信息工程学院 9 篇，比上期增加 5 篇，有较大增幅；汽车学院 5 篇；地质工程与测绘学院 6 篇；材料科学与工程学院 2 篇；地球科学与资源学院 1 篇；理学院 1 篇。表 3 显示了我校近四期 ESI 高被引论文院系分布变化情况。

表 3 近四期长安大学 ESI 高被引论文院系分布情况

ESI 更新时间	公路学院	环境科学与工程学院	汽车学院	信息工程学院	地质工程与测绘学院	材料科学与工程学院	地球科学与资源学院	理学院
2019.1.19	19	10	6	4	3	3	2	1
2019.3.14	15	11	6	4	4	3	1	1
2019.5.9	23	11	6	4	4	3	1	1
2019.7.11	26	10	5	9	6	2	1	1

表 4 显示了我校近四期 ESI 热点论文院系分布变化情况。

表 4 近四期长安大学 ESI 热点论文院系分布情况

ESI 更新时间	公路学院	信息工程学院	汽车学院	地质工程与测绘学院
2019.1.19	2	2	1	1
2019.3.14		1		1
2019.5.9	6			2
2019.7.11	本期无热点论文			

从本期 ESI 数据可以看出，公路学院保持稳定增长趋势，信息学院表现突出，本期高被引论文比上期有很大增幅，而环境科学与工程学院、汽车学院材料科学与工程学院、理学院近四期表现一直比较稳定。其他尚未有 ESI 高被引论文分布的院系仍需努力。从高被引论文作者分布来看，我校已经涌现出一些发文量、被

引频次较高的作者，我们对高被引论文以及热点论文的作者（仅限第一作者身份发表的论文）分布进行了统计分析，详见表 5。

表 5 我校高被引论文、热点论文的作者分布情况（仅统计第一作者）

作者	高被引	所属院系
LI, PY (Li, Peiyue)	6	环境科学与工程学院
LAI, JX (Lai, Jinxing)	5	公路学院
QIU, JL (Qiu, Junling)	5	公路学院
QI, DH (Qi, Donghui)	3	汽车学院
REN, R (Ren, Rui)	3	公路学院
FAN, X (Fan, Xiang)	2	公路学院
QIU, KF (Qiu, Kun-Feng)	2	地质工程与测绘学院
WANG, ZF (Wang, Zhi-Feng)	2	公路学院
WU, JH (Wu, Jianhua)	1	环境科学与工程学院
HUI, F (Hui, Fei)	1	信息工程学院
ZHANG, W (Zhang, Wei)	1	信息工程学院
YU, SW (Yu, Shaowei)	1	汽车学院
SONG, XL (Song Xueli)	1	理学院
DONG, M (Dong, Ming)	1	信息工程学院
XIN, Q (Xin, Qi)	1	汽车学院
ZHUANG, JQ (Zhuang, Jianqi)	1	地质工程与测绘学院
LUO, XL (Luo, Xianglong)	1	公路学院
LI, Y (Li, Yao)	1	公路学院
ZHOU, ZJ (Zhou, Zhijun)	1	公路学院
WANG, GP (Wang, Guiping)	1	信息工程学院
LI, YY (Li, Youyun)	1	公路学院

HE, SY (He, Siyue)	1	公路学院
HU, Z (Hu, Zhao)	1	公路学院

二. 我校 ESI 前 1% 学科概况与预测

本期我校工程学学科依然保持全球排名前 1%，在工程学领域共发表 ESI 论文 1, 276 篇，被引用 6, 153 次，其中高被引论文 23 篇，本期全球有 1446 所机构（大陆机构 193 所）的工程学学科进入 ESI 全球排名前 1% 行列，我校位列 769 位（大陆机构排名 101 位）。表 6 为近五期我校工程学 ESI 排名情况。

表 6 我校工程学 ESI 排名情况（近五期数据比较）

学科（更新时间）	中国大陆机构排名	ESI 全球排名	论文数	被引频次
工程学（2018.11.16）	92	904	998	4, 434
工程学（2019.1.19）	92	879	1, 080	4, 880
工程学（2019.3.14）	93	863	1, 140	5, 283
工程学（2019.5.9）	101	790	1, 190	5, 578
工程学（2019.7.11）	101	769	1, 276	6, 153

除了工程学，我校还有其他学科近期表现良好。选择 2009-2019 年来我校 ESI 各学科发文数量前 5 的学科：工程、材料科学、地学、化学和环境\生态学进行了 CNCI 值的分析，详见图 1、表 7。

表 7 我校发文数量前 5 的 ESI 学科 CNCI 值

学科	WOS 文献数量	CNCI 值	被引次数	被引百分比
工程学	1,292	1.03	6, 784	67.41%
地学	806	1.03	5, 950	75.06%
材料科学	876	0.73	5, 386	70.43%
化学	483	0.92	3, 240	76.6%
环境/生态学	446	0.93	2, 717	62.33%

如图 1，可以看到，工程和地球科学为长安大学优势学科；环境\生态学研究水平高于世界平均值，发文数量还不是很高，可看作潜力学科；而材料科学发文量比较高，但 CNCI 值低于世界平均水平。通过 CNCI 值的分析可以得知我校地球科学的研究水平已经达到较高的水平，因此在地球科学领域突破 ESI 前 1% 是极为有可能的。图 2 对 22 个 ESI 学科的阈值与我校各学科的被引频次进行了比较之后，进一步对具有潜力进入全球前 1% 的学科进行了预测。

从本期 ESI 数据可以看出，我校目前最有潜力进入全球前 1% 的学科依然是地球科学，已经非常接近了，其次是环境/生态学，也有很大潜力。但是其他学科要有所突破进入全球前 1%，还具有相当大的难度，还需要全校科研人员共同努力。

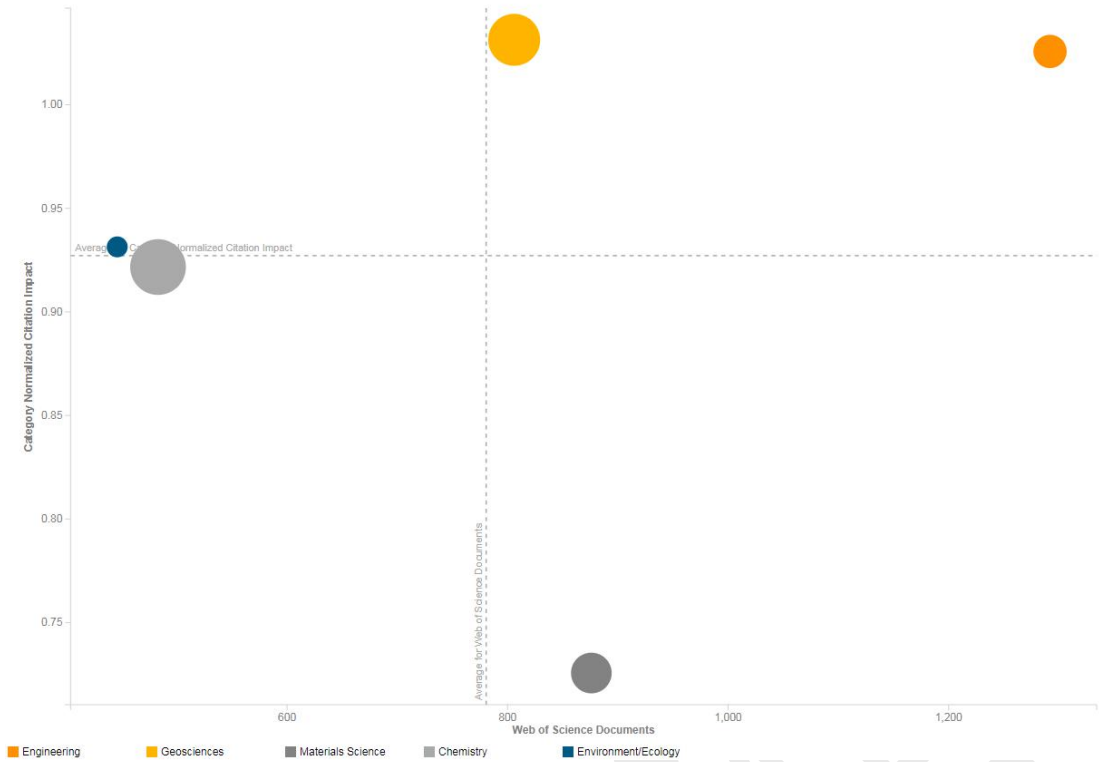


图 1 2009-2019 年我校发文量 TOP5 的 ESI 学科的 CNCI 值表现

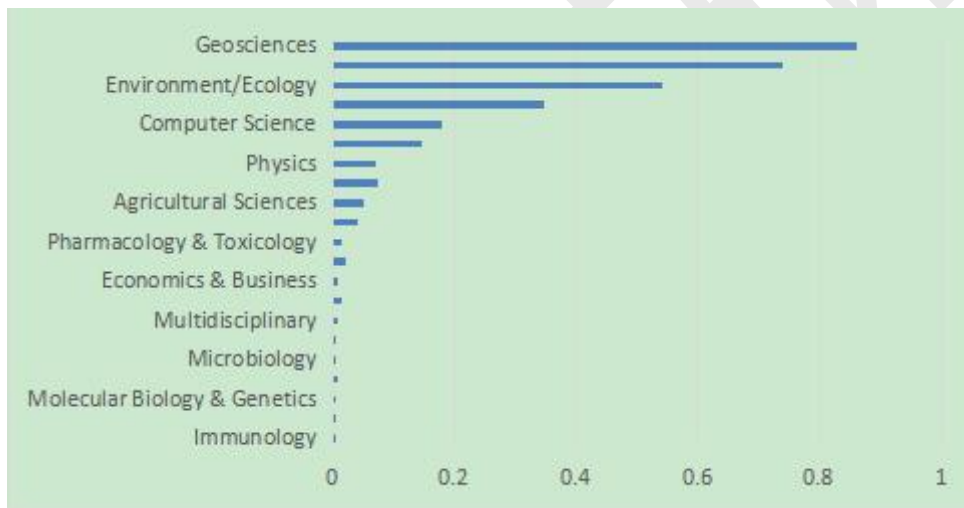


图 2 长安大学具有潜力进入全球前 1% 学科预测

本期全球有 684 所机构的地球科学进入全球前 1%，中国大陆有 49 所机构的地球科学进入前 1% 排位，下表 8 是地球科学目前已经进入全球前 1% 的 49 所大

陆机构的论文情况，而我校地球科学虽然每期的表现值都非常接近 ESI 的阈值，但是仍旧存在一些差距，见表 9，以便参考。

表 8 地球科学学科进入全球前 1% 的大陆 49 所机构的论文情况

序号	机构名称	Web of Science 论文数	总被引次 数	篇均被引次数	顶尖论文数	全球 ESI 地 球科学排位
1	中国科学院	32233	409265	12.70	415	2
2	中国地质大学	9550	116298	12.18	133	27
3	中国科学院地质与地球 物理研究所	5118	89050	17.40	80	37
4	中国科学院大学	9426	83498	8.86	68	42
5	北京大学	4155	73809	17.76	97	56
6	中国科学院大气物理研 究所	4162	62522	15.02	89	67
7	中国地质科学院	3813	58177	15.26	52	78
8	南京大学	3777	50218	13.30	43	95
9	中国科学院广州地球化 学研究所	2199	42663	19.40	37	117
10	北京师范大学	2935	38434	13.10	61	133
11	中国气象局	2722	35884	13.18	45	144
12	武汉大学	3444	32046	9.30	56	170
13	清华大学	1855	30183	16.27	64	181
14	南京信息工程大学	2768	26987	9.75	17	204
15	中国地震局	3352	27055	8.07	45	208
16	中国科学院地理科学与 自然资源研究所	2249	26524	11.79	28	212
17	兰州大学	1749	25043	14.32	32	226
18	中国石油大学	1778	23334	13.12	24	234
19	西北大学	3977	24208	6.09	67	236
20	中国科学技术大学	1118	23999	21.47	28	247
21	中国海洋大学	2577	22763	8.83	29	259
22	中国气象科学院	1752	22404	12.79	33	264
23	中国科学院地球环境研 究所	1009	19757	19.58	29	291
24	中国科学院寒冷干旱地 区环境工程研究所	1187	19496	16.42	25	292
25	中国矿业大学	2175	19259	8.85	35	301
26	中国石油总公司	2919	19098	6.54	20	303
27	吉林大学	1922	17629	9.17	11	328
28	西安交通大学	809	17369	21.47	21	331

29	同济大学	1675	15189	9.07	13	376
30	中山大学	1676	14854	8.86	21	385
31	国家海洋局	2119	13709	6.47	8	410
32	浙江大学	1425	11865	8.33	9	452
33	中国科学院遥感与数字地球研究所	1703	11207	6.58	20	465
34	中国科学院南海海洋研究所	1176	10932	9.30	8	474
35	中南大学	1305	10625	8.14	25	485
36	华东师范大学	791	9470	11.97	15	514
37	中国石油化工集团公司	1584	9353	5.90	8	522
38	成都理工大学	1249	9316	7.46	7	526
39	中国科学院海洋研究所	1057	9185	8.69	9	532
40	河海大学	1145	8366	7.31	10	559
41	中国科学院新疆生态地理研究所	635	8003	12.60	12	578
42	中国地质调查局	1071	7851	7.33	8	584
43	复旦大学	574	7245	12.62	10	616
44	厦门大学	705	7064	10.02	11	625
45	中国科学院南京地理湖沼研究所	497	7039	14.16	6	628
46	中国科学院脊椎动物古生物学与古人类学研究所	659	6920	10.50	0	634
47	中国科学院大地测量与地球物理研究所	685	6804	9.93	16	640
48	南京师范大学	510	6409	12.57	15	668
49	中国环境科学研究所	261	6245	23.93	8	684

表 9 长安大学地球科学论文情况 (2009-2019)

	Web of Science 论文数	总被引次数	ESI 地球科学 本期机构被引阈值
长安大学	828	6, 216	6, 245

长安大学一级学科与 ESI 学科的对照:

ESI 是按照 SCI/SSCI 的期刊属性来对学科进行分类, 这种分类体系和我校的学科设置不能完全匹配, 因此我校如果要在相关学科进入全球前 1%, 全校各个学科的师生都需要在该学科领域做出贡献。

表 10 ESI 学科与我校的学科对照表

ESI 学科	对应的我校一级学科	对应的学院
工程学	交通运输工程	公路学院
	材料科学与工程	材料科学与工程学院
	测绘科学与技术	地质工程与测绘学院
	环境科学与工程	环境科学与工程学院
	水利工程	环境科学与工程学院
	土木工程	建筑工程学院
	机械工程	汽车学院
地球科学	地质学	地质工程与测绘学院
		地球科学与资源学院
材料科学	材料科学与工程	材料科学与工程学院
		电子与控制工程学院
社会科学	管理科学与工程	经济与管理学院
	地理学	地质工程与测绘工程学院
经济与商业	经济学	经济与管理学院

注：表格中所有统计数据截止到 2019 年 7 月 15 日。

数据源简介:

Essential Science Indicators (基本科学指标, 简称 ESI) 是一个基于 Web of Science 核心合集数据库的深度分析型研究工具。ESI 可以确定在某个研究领域有影响力的国家、机构、论文和出版物, 以及研究前沿。这种独特而全面的基于论文产出和引文影响力深入分析的数据是政府机构、大学、企业、实验室、出版公司和基金会的决策者、管理者、情报分析人员和信息专家理想的分析资源。通过 ESI, 用户可以对科研绩效和发展趋势进行长期的定量分析。基于期刊论文发表数量和引文数据, ESI 提供对 22 个学科研究领域中的国家、机构和期刊的科研绩效统计和科研实力排名。

ESI 高被引论文 (Highly Cited Paper) 是指在近十多年的论文中按照同一年、同一 ESI 学科论文的被引频次由高到低进行排序, 排在前 1% 的论文。从理论上讲, 如果一篇论文被引频次达到前 1% 则说明该论文达到学科较高水平, 具有较高的影响力。ESI 热点论文 (Hot Paper): 是指近 2 年内发表的论文且在近 2 个月内被引次数排在相应学科领域全球前 1% 以内。



附录 1: 长安大学 ESI 高被引论文 (2019 年 7 月 11 日更新)

第 1 条, 共 60 条

标题: Particle size distribution effects on deformation properties of graded aggregate base under cyclic loading

作者: Lin, H (Lin, Hang); Wang, H (Wang, Hu); Fan, X (Fan, Xiang); Cao, P (Cao, Ping); Zhou, KF (Zhou, Kefeng)

来源出版物: EUROPEAN JOURNAL OF ENVIRONMENTAL AND CIVIL ENGINEERING

卷: 23 期: 3 页: 269-286 DOI: 10.1080/19648189.2016.1276480 出版年: MAR 4 2019

Web of Science 核心合集中的 "被引频次": 16

被引频次合计: 16

使用次数 (最近 180 天): 4

使用次数 (2013 年至今): 4

引用的参考文献数: 22

摘要: The highway base layers performance is significantly affected by its component of particles. A particle flow code numerical simulation study was conducted to determine particle size distribution (PSD) effects on deformation properties of highway base layers under cyclic loading. Nine kinds of graded aggregate were chosen. A series of analysis, the stress-strain response, deformation characteristics, and dynamic elastic modulus of the graded aggregate were performed through dynamic biaxial numerical simulation. Under vibratory loading, the fine particles filled the interspace of the coarse particles, and with re-orientation of the fine particles account for plastic strain. After the compaction of granular material, the interaction between fine particles and coarse particles contributes to the increase in dynamic elastic modulus. And there exists an optimum PSD of fine particles to yield maximum dynamic elastic modulus.

入藏号: WOS:000466179000001

语言: English

文献类型: Article

作者关键词: deformation properties; graded aggregate; particle size distribution; cyclic loading; micromechanics

KeyWords Plus: BEHAVIOR; BALLAST; SOILS

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ESI 高被引论文: Y

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第 2 条, 共 60 条

标题: New multiple stages two-step complete in phase algorithm with improved characteristics for

second order initial/boundary value problems

作者: Wang, GP (Wang, Guiping); Simos, TE (Simos, T. E.)

来源出版物: JOURNAL OF MATHEMATICAL CHEMISTRY 卷: 57 期: 2 页: 494-515

DOI: 10.1007/s10910-018-0961-y 出版年: FEB 2019

Web of Science 核心合集中的 "被引频次": 5

被引频次合计: 5

使用次数 (最近 180 天): 1

使用次数 (2013 年至今): 1

引用的参考文献数: 123

摘要: In the present paper and for the first time in the bibliography, we form a new multiple stages multistep complete in phase algorithm with meliorated properties. A detailed theoretical and computational study is also represented. The competence of the new algorithm is tested using systems of coupled differential equations of the Schrodinger type.

入藏号: WOS:000458139300005

语言: English

文献类型: Article

作者关键词: Phase-lag; Derivative of the phase-lag; Initial value problems; Oscillating solution; Symmetric; Hybrid; Multistep; Schrodinger equation; 65L05

KeyWords Plus: FINITE-DIFFERENCE PAIR; PREDICTOR-CORRECTOR METHOD; EXPLICIT 4-STEP METHOD; INITIAL-VALUE PROBLEMS; P-STABLE METHOD; TRIGONOMETRICALLY-FITTED METHODS; KUTTA-NYSTROM METHOD; NUMEROV-TYPE METHODS; NUMERICAL-SOLUTION; SCHRODINGER-EQUATION

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ESI 高被引论文: Y

ESI 热点论文: N

第 3 条, 共 60 条

标题: How Safe Is Safe Enough for Self-Driving Vehicles?

作者: Liu, P (Liu, Peng); Yang, R (Yang, Run); Xu, ZG (Xu, Zhigang)

来源出版物: RISK ANALYSIS 卷: 39 期: 2 特刊: SI 页: 315-325 DOI: 10.1111/risa.13116 出版年: FEB 2019

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引用的参考文献数: 58

摘要: Self-driving vehicles (SDVs) promise to considerably reduce traffic crashes. One pressing concern facing the public, automakers, and governments is "How safe is safe enough for SDVs?" To answer this question, a new expressed-preference approach was proposed for the first time to determine the socially acceptable risk of SDVs. In our between-subject survey (N = 499), we determined the respondents' risk-acceptance rate of scenarios with varying traffic-risk frequencies to examine the logarithmic relationships between the traffic-risk frequency and risk-acceptance rate. Logarithmic regression models of SDVs were compared to those of human-driven vehicles (HDVs); the results showed that SDVs were required to be safer than HDVs. Given the same traffic-risk-acceptance rates for SDVs and HDVs, their associated acceptable risk frequencies of SDVs and HDVs were predicted and compared. Two risk-acceptance criteria emerged: the tolerable risk criterion, which indicates that SDVs should be four to five times as safe as HDVs, and the broadly acceptable risk criterion, which suggests that half of the respondents hoped that the traffic risk of SDVs would be two orders of magnitude lower than the current estimated traffic risk. The approach and these results could provide insights for government regulatory authorities for establishing clear safety requirements for SDVs.

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PubMed ID: 29783277

语言: English

文献类型: Article

作者关键词: Broadly acceptable risk criterion; expressed-preference approach; self-driving vehicles; socially acceptable risk; tolerable risk criterion

KeyWords Plus: RISK PERCEPTION; GENDER-DIFFERENCES; ACCEPTABLE RISK; NUCLEAR-POWER; ATTITUDES

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ESI 高被引论文: Y

ESI 热点论文: N

第 4 条, 共 60 条

标题: Public Acceptance of Fully Automated Driving: Effects of Social Trust and Risk/Benefit Perceptions

作者: Liu, P (Liu, Peng); Yang, R (Yang, Run); Xu, ZG (Xu, Zhigang)

来源出版物: RISK ANALYSIS 卷: 39 期: 2 特刊: SI 页: 326-341 DOI: 10.1111/risa.13143 出版年: FEB 2019

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引用的参考文献数: 73

摘要: Automated driving (AD) is one of the most significant technical advances in the transportation industry. Its safety, economic, and environmental benefits cannot be realized if it is not used. To explain, predict, and increase its acceptance, we need to understand how people perceive and why they accept or reject AD technology. Drawing upon the trust heuristic, we tested a psychological model to explain three acceptance measures of fully AD (FAD): general acceptance, willingness to pay (WTP), and behavioral intention (BI). This heuristic suggests that social trust can directly affect acceptance or indirectly affect acceptance through perceived benefits and risks. Using a survey (N = 441), we found that social trust retained a direct effect as well as an indirect effect on all FAD acceptance measures. The indirect effect of social trust was more prominent in forming general acceptance; the direct effect of social trust was more prominent in explaining WTP and BI. Compared to perceived risk, perceived benefit was a stronger predictor of all FAD acceptance measures and also a stronger mediator of the trust-acceptance relationship. Predictive ability of the proposed model for the three acceptance measures was confirmed. We discuss the implications of our results for theory and practice.

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PubMed ID: 30059602

语言: English

文献类型: Article

作者关键词: Fully automated driving; public acceptance; risk/benefit perception; social trust; trust heuristic

KeyWords Plus: PERCEIVED RISK; TECHNOLOGY ACCEPTANCE; AUTONOMOUS VEHICLES; ATTITUDE FORMATION; USER ACCEPTANCE; BENEFITS; MODEL; ACCEPTABILITY; DETERMINANTS; INTENTION

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ESI 热点论文: N

第 5 条, 共 60 条

标题: Review of the flame retardancy on highway tunnel asphalt pavement

作者: Qiu, JL (Qiu, Junling); Yang, T (Yang, Tao); Wang, XL (Wang, Xiuling); Wang, LX (Wang, Lixin); Zhang, GL (Zhang, Guanglong)

来源出版物: CONSTRUCTION AND BUILDING MATERIALS 卷: 195 页: 468-482 DOI: 10.1016/j.conbuildmat.2018.11.034 出版年: JAN 20 2019

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使用次数 (2013 年至今): 73

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摘要: Though asphalt pavement is widely used in highway tunnels, the flammability of the asphalt pavement is still one significant topic for an in-depth study due to the serious consequences of the tunnel fire. This paper presents a review of the flame retardancy on highway tunnel asphalt pavement. Firstly, the combustion of asphalt pavement and cement pavement is compared on the basis of highway tunnel fire, the commonly used asphalt flame-retardant evaluation standards are analyzed. Secondly, flame-retardant technologies including flame retardant, component flame-retardant method and porous structure flame-retardant method are summarized. Furthermore, the application of nanotechnology in flame-retardant asphalt is reviewed. Finally, concluding remarks and important future investigation directions are presented, which will be advantageous to future study the flame retardancy on highway tunnel asphalt pavement. (C) 2018 Elsevier Ltd. All rights reserved.

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语言: English

文献类型: Review

作者关键词: Highway tunnel; Asphalt pavement; Flame-retardant method; Evaluation of flame retardancy; Nanotechnology

KeyWords Plus: WARM MIX ASPHALT; HIGH-TEMPERATURE PERFORMANCE; THERMAL-PROPERTIES; COMBUSTION MECHANISM; MOISTURE SUSCEPTIBILITY; MIXTURE DESIGN; CONCRETE; AGGREGATE; BEHAVIOR; NANOCCLAY

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ESI 高被引论文: Y

ESI 热点论文: N

第 6 条, 共 60 条

标题: A New Soil-Water Characteristic Curve Model for Unsaturated Loess Based on Wetting-Induced Pore Deformation

作者: Zhang, YW (Zhang, Yuwei); Song, ZP (Song, Zhanping); Weng, XL (Weng, Xiaolin); Xie, YL (Xie, Yongli)

来源出版物: GEOFLUIDS 文献号: UNSP 1672418 DOI: 10.1155/2019/1672418 出版年: 2019

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使用次数 (2013 年至今): 15

引用的参考文献数: 66

摘要: The soil-water characteristic curve (SWCC) is the basis for describing seepage, strength, and constitutive model of unsaturated soil. The existing SWCC models do not work accurately for evaluating loess, because they do not consider the pore deformation that is induced by wetting. The present study develops a new SWCC model for unsaturated loess. The model considers the effect of wetting-induced pore deformation (WIPD) on the SWCC. The new model includes 6 parameters, which could be confirmed by laboratory tests. The pore volume function (PVF) was described by the WIPD. The shift factor $\xi(1i)$ and the compression factor $\xi(2i)$ were introduced into the model. The relationship between the void ratio e and $\xi(1i)$ and $\xi(2i)$ was established using the average pore radius. The new SWCC model for saturated loess was improved based on the classical van Genuchten (V-G) model. If the WIPD had not been considered, the new model would regress into the classical V-G model. SWCC tests of unsaturated loess with different void ratios were carried out to verify the new model. The model parameters were calibrated in the original state, and the SWCCs of different void ratios were predicted by the new model and found to be in good agreement with the test results.

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语言: English

文献类型: Article

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ESI 高被引论文: Y

ESI 热点论文: N

第 7 条, 共 60 条

标题: Dynamic Failure Mode and Dynamic Response of High Slope Using Shaking Table Test

作者: Zhou, ZJ (Zhou, Zhijun); Ren, CN (Ren, Chenning); Xu, GJ (Xu, Guanjun); Zhan, HC (Zhan, Haochen); Liu, T (Liu, Tong)

来源出版物: SHOCK AND VIBRATION 文献号: 4802740 DOI: 10.1155/2019/4802740 出版年: 2019

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使用次数 (最近 180 天): 2

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摘要: A shaking table test was performed to study the dynamic response and failure modes of high slope. Test results show that PGA amplification coefficients increased with increasing elevation and the PGA amplification coefficient of the concave slope was slightly larger than that of the convex slope. The slope type affected the dynamic response of the slope. The elevation amplification effect of the concave slope under seismic load was more significant than that of the convex slope; thus, the concave slope was more unstable than the convex slope. Additionally, the

PGA amplification coefficient measured on the slope surface was always larger than that inside the slope, and the data show an increasing trend with the broken line. The dynamic amplification effect of the high slope was closely related to the natural frequency of the slope. Within a certain range, the higher the frequency, the more significant the amplification effect. The dynamic failure process of concave and convex slopes was studied through tests. Findings indicate that the dynamic failure modes of the concave slope are characterized by shoulder collapse, formation of the sliding surface, and integral sliding above the slope line. Dynamic failure modes of the convex slope are mainly slips in the soil layer and collapse of the slope near the slope line.

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语言: English

文献类型: Article

KeyWords Plus: DEFORMATION

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来源出版物页码计数: 19

ESI 高被引论文: Y

ESI 热点论文: N

第 8 条, 共 60 条

标题: Statistical Analysis of Influence of Cover Depth on Loess Tunnel Deformation in NW China

作者: Hu, Z (Hu, Zhao); Du, K (Du, Ke); Lai, JX (Lai, Jinxing); Xie, YL (Xie, Yongli)

来源出版物: ADVANCES IN CIVIL ENGINEERING 文献号: 2706976 DOI: 10.1155/2019/2706976 出版年: 2019

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使用次数 (2013 年至今): 19

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摘要: Loess is a kind of special soil with structure and hydrocollapse behavior; due to the particularity of loess, the deformation regularity of the tunnel in loess shows different characteristics from those in rock. To ensure the safety of construction, crown settlement (CS) and horizontal convergence (HC) are widely used to assess the stability of the tunnel structural system. Based on statistical analysis, this study focused on analyzing the influence of cover depth on the deformation of surrounding rock of loess tunnels by ANOVA, and relationships between them were presented by regression analysis. The achieved results indicated that the influence of cover depth on deformation was not obvious in shallow tunnels, while the cover depth had a significant effect on deformation in deep tunnels. Based on the difference of influence of cover depth on deformation between shallow tunnels and deep tunnels, a method for determining the cover depth threshold (CDT) in the tunnel by statistical analysis was proposed. The horizontal and vertical deformations in shallow tunnels were discrete and obeyed the positive distribution, mainly concentrated within 200mm. The deformation allowance in shallow tunnels was recommended to be 200mm. In deep tunnels, as the cover depth increased, the deformation increased linearly, while the CS/HC decreased.

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语言: English

文献类型: Article

KeyWords Plus: ENGINEERING GEOLOGY; SAFETY ASSESSMENT; DISPLACEMENT; CONSTRUCTION; ACCIDENTS; STIFFNESS; LANZHOU; RAILWAY; SECTION; NATM

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ESI 热点论文: N

第 9 条, 共 60 条

标题: Structural Response of the Metro Tunnel under Local Dynamic Water Environment in Loess Strata

作者: Qiu, JL (Qiu, Junling); Qin, YW (Qin, Yiwen); Lai, JX (Lai, Jinxing); Wang, K (Wang, Ke); Niu, FY (Niu, Fangyuan); Wang, H (Wang, Hao); Zhang, GL (Zhang, Guanglong)

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使用次数 (2013 年至今): 19

引用的参考文献数: 69

摘要: The reasons, prevention, and control of loess disaster are of great concern in practice. In recent years, Xi'an city, China, has taken the leadership in large-scale construction of subway lines in the loess strata. To study the structural response of the tunnel in loess region under local hydrodynamic environment, an experimental testing in 1g as well as a numerical simulation were performed, in which the achieved results were verified and were found to be in good agreement. Furthermore, the results showed that when the water outlet point is above the lining, the overall stress of the lining is peanut shell, as the water pressure of the outlet point decreases, the tensile stress of the top and bottom of the lining increases, while the compressive stress on both sides decreases; the channel form of the flow to the lining changes with the variation of the position of the water outlet point. It is worth mentioning that in the process of water gushing, the closer to the water source, the greater surface subsidence is, and there is a positive correlation between water pressure and surface subsidence. This study is of significant benchmark for the construction, maintenance, and prevention of tunnel in loess strata under the influence of water environment.

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语言: English

文献类型: Article

KeyWords Plus: BEHAVIOR; MODEL; DEFORMATION; PREDICTION; ACCIDENTS; PRESSURE; LEAKAGE; FLOW

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ESI 热点论文: N

第 10 条, 共 60 条

标题: Multi-criteria user equilibrium model considering travel time, travel time reliability and distance

作者: Sun, C (Sun, Chao); Cheng, L (Cheng, Lin); Zhu, SL (Zhu, Senlai); Han, F (Han, Fei); Chu, ZM (Chu, Zhaoming)

来源出版物: TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT

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摘要: This paper proposes a multi-criteria user equilibrium model considering travel time, travel time reliability and distance (MUE-TRD). This new model hypothesizes that for each user class and each origin-destination (O-D) pair no traveler can reduce either his or her reliable travel time or travel distance or both without worsening the other objective by unilaterally changing routes in their route choice decision process. Travel time budget which consists of travel time and travel time reliability is used to describe the reliable travel time. A maximum entropy multi-criteria user equilibrium (ME-MUE) model is presented to address the non-uniqueness of the solution in MUE-TRD model. Furthermore, a route-based solution algorithm based on the partial linearization descent method (R-PLD) is developed to solve the ME-MUE model. Numerical examples are also provided to illustrate the essential ideas of the proposed model and the applicability of the developed solution algorithm. The results show that compared to traditional user equilibrium and travel time budget models, ME-MUE model is more consistent with the real trip process that the reliable travel time is increasing with the decreasing of travel distance in used routes; and the road traffic is smoother when using ME-MUE model to design the road network, thus ME-MUE model can reduce road traffic noise and air pollution in the urban road network. (C) 2017 Elsevier Ltd. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Multi-criteria user equilibrium; Travel time; Travel time reliability; Travel distance; Maximum entropy; Partial linearization descent method

KeyWords Plus: BICRITERION TRAFFIC ASSIGNMENT; SHORTEST-PATH PROBLEM; NETWORK

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第 11 条, 共 60 条

标题: Free vibration of nonlocal Timoshenko beams made of functionally graded materials by Symplectic method
作者: Zhang, K (Zhang, Kai); Ge, MH (Ge, Meng-Hua); Zhao, C (Zhao, Cheng); Deng, ZC (Deng, Zi-Chen); Xu, XJ (Xu, Xiao-Jian)
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摘要: The aim of this paper is to numerically investigate the size-dependent vibration behavior of the nano-beam made of functionally graded materials (FGMs). The material properties of the FGMs are considered to vary throughout the thickness direction of the beams. Based on the non-local theory and the material and dimensions of the beams, the total energy including the potential and kinetic energy of the FGMs beams is obtained. The first-order governing differential equations in the Hamilton systems of the beam are constructed by introducing the dual variables and with the help of the variational principle. A precise-constant method and extended Wittrick-Williams algorithm are applied to obtain the structural frequencies of the nano-beams with the clamped-free and clamped-clamped boundary conditions. The model is verified by comparing the results with the data available in the literature. In the following, a study is carried out to find the effects of the nonlocal parameter, power index, and aspect ratio on the vibration of the FGMs nano-beams with the clamped-free and clamped-clamped boundary conditions respectively. The results show the soft effect of the nonlocal parameter on the structural vibration and the increase of the nonlocal parameter leads to the decrease of the frequency. The power index and aspect ratio also have significant effects on the vibration of the beams. The increase of the power index can increase the ceramic volume fraction in the FGMs, which leads to the increase of structural frequencies. The vibration of the beams can be controlled by choosing proper values of the power index and aspect ratio.

入藏号: WOS:000457206000020

语言: English

文献类型: Article

作者关键词: Nonlocal Timoshenko beam; Size effect; Functionally graded materials; Hamilton system; Symplectic analysis

KeyWords Plus: CARBON NANOTUBES; WAVE-PROPAGATION; EULER-BERNOULLI; BUCKLING ANALYSIS; INTEGRAL MODEL; PLATES; NANOBAMS; STRESS; INSTABILITY

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第 12 条, 共 60 条

标题: Methane explosion accidents of tunnels in SW China

作者: He, SY (He, Siyue); Su, LJ (Su, Linjian); Fan, HB (Fan, Haobo); Ren, R (Ren, Rui)

来源出版物: GEOMATICS NATURAL HAZARDS & RISK 卷: 10 期: 1 页: 667-677

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摘要: This Express Letter reports three methane explosion accidents during tunnel construction in Southwest China. In recent years, tunnel construction of China is developing rapidly. The geological conditions of the tunnel passing through are extremely complex, especially, tunnels in coal strata increase rapidly, what's worse, many methane explosions occur during the tunnel construction. The backgrounds, causes and rescue operation of three methane explosion accidents situation are studied. Furthermore, we proposed relevant measures to prevent methane explosions of tunnels.

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语言: English

文献类型: Article

作者关键词: Tunnel construction; SW China; methane explosion accidents; rescue operation; relevant measures

KeyWords Plus: SAFETY ASSESSMENT; BEHAVIOR

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第 13 条, 共 60 条

标题: Typhoon triggered operation tunnel debris flow disaster in coastal areas of SE China

作者: Ren, R (Ren, Rui); Yu, DQ (Yu, Deqiang); Wang, LX (Wang, Lixin); Wang, K (Wang, Ke); Wang, H (Wang, Hao); He, SY (He, Siyue)

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摘要: Typhoons have inflicted significant damage and loss of life to China, a large number of typhoon-rainstorm-debris flow-tunnel accidents occur in the southeastern coastal areas each year. Considering the disaster prevention and mitigation decision-making of disaster accidents in coastal areas and the reduction of regional economic losses, this Express Letter presents some typical accident scenes and rescue measures in recent years and analyses the hazard mechanism from three aspects. On this basis, we propose some suggestions such as the monitoring and early-warning system, which can provide a few references for reducing disaster losses and improving disaster treatments.

入藏号: WOS:000455439200001

语言: English

文献类型: Article

作者关键词: Natural disaster; typhoon; debris flow; tunnel; hazard mechanism; disaster prevention; southeast coast of China

KeyWords Plus: CONSTITUTIVE MODEL

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第 14 条, 共 60 条

标题: Numerical analysis of the compressive and shear failure behavior of rock containing multi-intermittent joints

作者: Fan, X (Fan, Xiang); Lin, H (Lin, Hang); Lai, HP (Lai, Hongpeng); Cao, RH (Cao, Rihong); Liu, J (Liu, Jie)

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摘要: The failure behavior of intermittent jointed rocks is dependent on joint configurations. Joint inclination angle and continuity factor determined the joint arrangement in a rectangular numerical sample that was established by using the particle flow code approach. To identify the differences in the failure processes of identical intermittent jointed samples, uniaxial compressive and shear loads were applied on each sample. The crack growth path presented the four typical crack coalescence patterns identified via compressive and shear numerical tests. The crack coalescence pattern was associated with joint slant angle and continuity factor. The observed crack coalescence patterns of every sample with the same inclination angle and continuity factor were partially identical under compressive and shear loading. The differences in the crack patterns of the compressive and shear failure processes were described and compared. Typical compressive and shear failure processes were illustrated. Four compressive and three shear failure modes were identified. The cracking location and number of cracks in each failure mode were different. Additionally, the contact force evolution among particles during shear and compressive loading was different and likely accounted for the differences in cracking patterns. Under compressive or shear loading, the contact force concentration in each sample underwent the following stages: uniform distribution before loading, concentrated distribution, and scattered distribution after failure. (C) 2018 Academie des sciences. Published by Elsevier Masson SAS. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Direct shear test; Intermittent joint; Failure behavior; Contact force evolution; Particle flow code

KeyWords Plus: UNIAXIAL COMPRESSION; MECHANICAL-PROPERTIES; MASS MODELS; STRENGTH; COALESCENCE; CRACKING; FLAWS; SIMULATION; STRESS; MARBLE

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第 15 条, 共 60 条

标题: Statistical analysis of fire accidents in Chinese highway tunnels 2000-2016
作者: Ren, R (Ren, Rui); Zhou, H (Zhou, Hui); Hu, Z (Hu, Zhao); He, SY (He, Siyue); Wang, XL (Wang, Xiuling)
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引用的参考文献数: 60
摘要: Statistical analysis of tunnel fire accidents (TFAs) in China 2000-2016 as related to causes, characteristics, and consequences are discussed in this study with average frequency, time and locations, vehicle types, and regional distribution features revealed. Analysis results indicate that over half of TFAs in China result from vehicle technical problem. The average prevalence of TFAs has increased yearly since 2000 with the majority of incidences occurring in the summer and winter seasons and the autumn season experiencing the least. Fire accident prone locations tend to be at entrance and exit points of highway tunnels with heavy goods vehicles experiencing the largest proportion of TFAs at 58.2%. Countermeasures focusing on improving tunnel safety are recommended.
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语言: English
文献类型: Article
作者关键词: Highway tunnel; Fire accident; Statistical analysis; Distribution characteristics; Countermeasures
KeyWords Plus: COLD REGION TUNNEL; TRAFFIC ACCIDENTS; DANGEROUS GOODS; ROAD; TECHNOLOGY; DAMAGE; STATE
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第 16 条, 共 60 条

标题: A Study on the Mechanical Behavior and Statistical Damage Constitutive Model of Sandstone
作者: Wang, JB (Wang, Junbao); Song, ZP (Song, Zhanping); Zhao, BY (Zhao, Baoyun); Liu, XR (Liu, Xinrong); Liu, J (Liu, Jun); Lai, JX (Lai, Jinxing)
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摘要: Triaxial compression test results of sandstone indicate that the peak point strain, elastic modulus, peak deviatoric stress and residual deviatoric stress of the tested sandstone increase with increasing confining pressure, and the variations in them with the confining pressure can be described with a linear function, a logistic function, the generalized Hoek-Brown criterion and the linear Mohr-Coulomb criterion, respectively. Supposing that the rock material can be divided into an elastic part and a damaged part in the rock failure process, the deviatoric stress-strain relationship of the elastic part satisfies Hooke's law, while the damaged part provides residual deviatoric stress. On this basis, it was assumed the rock meso-element strength follows a composite power function distribution. Then, the damage evolution equation was deduced using a statistical method, and a new damage model, which can reflect the rock residual deviatoric stress, was proposed. The reasonability of the new model was verified using the test results of the sandstone. A comparison of the predicted and test results shows that this damage model can well simulate the deviatoric stress-strain response in the failure process of the tested sandstone. In particular, it can reflect the residual deviatoric stress after rock failure.

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语言: English

文献类型: Article

作者关键词: Sandstone; Mechanical behavior; Statistical damage constitutive model; Composite power function distribution; Residual deviatoric stress

KeyWords Plus: TRIAXIAL COMPRESSION; UNIAXIAL COMPRESSION; ROCK; STRENGTH; FAILURE; CRITERION; INTACT; SALT

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第 17 条, 共 60 条

标题: Extreme deformation characteristics and countermeasures for a tunnel in difficult grounds in southern Shaanxi, China

作者: Lai, JX (Lai, Jinxing); Wang, XL (Wang, Xiuling); Qiu, JL (Qiu, Junling); Chen, JX (Chen, Jianxun); Hu, ZN (Hu, Zhinan); Wang, H (Wang, Hao)

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摘要: The Qingling-Bashan (QB) mountain region in southern Shaanxi mainly consists of strongly compressive zones from east to west, with tight folds and compressive fractures. There is a wide distribution of soft rocks of various types, such as phyllite and slate, accompanied by complex geological structures. Ironically, tunnel construction in these difficult grounds with complicated geological conditions embraces a high risk of extreme deformation due to various unpredictable reasons, which can frequently cause collapse and result in budget overruns during the construction period. Therefore, it is crucial to conduct effective countermeasures to eliminate or avoid such adverse impacts. This paper provides a case study on the Yingfeng tunnel (a tunnel constructed in soft rock consisting of a slate ground) based on a geological survey, indoor experiments and in situ monitoring. A successive rock mass deformation resulted in the tunnel lining seriously intruding into construction clearance and some other sections, even collapsing during the construction. The maximum displacement amount was 62.5cm, while the maximum deformation speed reached as high as 34.18mm/day. Additionally, to evaluate the construction impacts of tunnelling-induced geo-hazards, an investigation on extreme deformation was conducted. Considering the time-dependent features of the rock mass deformation, the constraint-convergence method was used to put forward applicable countermeasures in this paper. Finally, from the feedbacks of monitoring results, extreme deformation of the Yingfeng tunnel was effectively controlled.

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语言: English

文献类型: Article

作者关键词: Extreme deformation; Tunnelling in difficult grounds; Constraint-convergence method; Countermeasures; Monitoring

KeyWords Plus: REACTION CURVES; DEEP TUNNELS; NUMERICAL-ANALYSIS; SUPPORT-SYSTEM; ROCK; CONSTRUCTION; PREDICTION; MODEL; MOUNTAIN; BEHAVIOR

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第 18 条, 共 60 条

标题: Investigating the Long-Term Settlement of a Tunnel Built over Improved Loessial Foundation Soil Using Jet Grouting Technique

作者: Qiu, JL (Qiu, Junling); Liu, HQ (Liu, Houquan); Lai, JX (Lai, Jinxing); Lai, HP (Lai, Hongpeng); Chen, JX (Chen, Jianxun); Wang, K (Wang, Ke)

来源出版物: JOURNAL OF PERFORMANCE OF CONSTRUCTED FACILITIES 卷: 32 期: 5 文献号: 04018066 DOI: 10.1061/(ASCE)CF.1943-5509.0001155 出版年: OCT 2018

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摘要: Postconstruction settlement that occurs before a tunnel is in operation may significantly influence the tunnel's long-term stability. The current study investigates such a tunnel, a three-lane superlarge section tunnel in Gansu Province, China, to assess the long-term settlement performance of a loess tunnel using reinforcement from vertical jet grouting piles. A three-dimensional finite-element model, validated through field observations, is employed to simulate soil consolidation behavior. Results indicate that the long-term settlement, as determined by the finite-element method (FEM), corresponds with field investigation results. Specifically, most of the Fujaiyao tunnel's long-term settlement (nearly 90%) occurred within the first 60days after tunneling. Settlement occurred at a relatively rapid consolidation rate and then gradually stabilized within 120days with a maximum consolidation settlement magnitude of 14.99mm according to FEM versus 12.89mm from field observations. Compared to a case without reinforcement, consolidation settlement in the reinforced case was found to decrease significantly over a shorter consolidation period. Furthermore, the relatively large consolidation settlement surrounding the tunnel, as well as consolidation settlement overall, gradually and uniformly declined in an outward direction from the tunnel. The vertical jet grouting technique exhibited a strong reinforcement effect on the loess tunnel's foundation and can be applied to similar soft foundation tunnel reinforcement projects to greatly improve the stability and safety of tunnels in operation.

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语言: English

文献类型: Article

作者关键词: Loess tunnel; Vertical jet grouting pile; Finite-element model; Field observations; Long-term settlement

KeyWords Plus: SHALLOW TUNNELS; CONSOLIDATION; MODEL; DEFORMATION; BEHAVIOR; REGION; CHINA

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第 19 条, 共 60 条

标题: An Algorithm for Traffic Flow Prediction Based on Improved SARIMA and GA

作者: Luo, XL (Luo, Xianglong); Niu, LY (Niu, Liyao); Zhang, SR (Zhang, Shengrui)

来源出版物: KSCE JOURNAL OF CIVIL ENGINEERING 卷: 22 期: 10 页: 4107-4115

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摘要: The traffic flow prediction plays a key role in modern Intelligent Transportation Systems (ITS). Although great achievements have been made in traffic flow prediction, it is still a challenge to improve the prediction accuracy and reduce the operation time simultaneously. In this paper, we proposed a hybrid prediction methodology combined with improved seasonal autoregressive integrated moving average (ISARIMA) model and multi-input autoregressive (AR) model by genetic algorithm (GA) optimization. Since traffic flow data has strong spatio-temporal correlation with neighboring stations, GA is used to select those stations which are highly correlated with the prediction station. The ISARIMA model is used to predict the traffic flow in test station at first. A multiinput AR model with traffic flow data in optimal selected stations is built to predict the traffic flow in test station as well. The final prediction result can be gained by combining with the results of ISARIMA and multi-input AR model. The test results from traffic data provided by TDRL at UMD Data Center demonstrate that proposed algorithm has almost the same prediction accuracy with artificial neural networks (ANNS). However, its operation time is almost the same with SARIMA model. It is proved to be an effective method to perform traffic flow prediction.

入藏号: WOS:000451529600043

语言: English

文献类型: Article

作者关键词: traffic flow prediction; SARIMA; spatio-temporal correlation; GA

KeyWords Plus: KALMAN FILTER; NETWORK; VOLUME; MODELS

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ESI 高被引论文: Y

ESI 热点论文: N

第 20 条, 共 60 条

标题: Response characteristics and preventions for seismic subsidence of loess in Northwest China

作者: Qiu, JL (Qiu, Junling); Wang, XL (Wang, Xiuling); Lai, JX (Lai, Jinxing); Zhang, Q (Zhang, Qian); Wang, JB (Wang, Junbao)

来源出版物: NATURAL HAZARDS 卷: 92 期: 3 页: 1909-1935 DOI: 10.1007/s11069-018-3272-5 出版年: JUL 2018

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摘要: Seismic subsidence of loess had been verified by microstructure characteristic, dynamic

triaxial test and in situ simulation test using blasting vibration. It has gradually become a significant subject in the field of geotechnical earthquake engineering. Loess is widely distributed in China, which typically has a loose honeycomb-type meta-stable structure that is susceptible to a large reduction in total volume or subsidence upon ground motion. Seismic subsidence contributes to various problems to infrastructures that are constructed on loess. This paper provides a review of state-of-the-art work on mechanism, microstructure characteristic and physical mechanics mechanism of the seismic subsidence. Furthermore, the comprehensive explanation, basics and earlier research performed on subsidence amount estimation, seismic subsidence assessment and corresponding preventions of disasters have been presented briefly. The literature review shows that some significant problems, for example, appropriate theoretical basis, multi-variable coupling in assessment, physical processes, mechanical mechanism in estimation, and so on require constant research and development work to overcome the aforementioned factors. Specifically, research on quantitative relation between macro-mechanics and microstructure cannot proceed only from experimental parameters but should establish theoretical connection between them. Further study on seismic subsidence must be developed under the theory of unsaturated soil mechanics. In addition, research on chronological and spatial development law of large-scale seismic subsidence, prediction of subsidence value and anti-seismic analysis of underground structures can be conducted in future.

入藏号: WOS:000433913500032

语言: English

文献类型: Review

作者关键词: Loess; Seismic subsidence; Mechanism; Microstructure; Probability assessment of loess seismic subsidence; Estimation of subsidence amount; Disasters and preventions

KeyWords Plus: GEOTECHNICAL PROPERTIES; MERCURY INTRUSION; MICROSTRUCTURE; TUNNEL; COLLAPSE; DEFORMATION; LANDSLIDES; DEPOSITS; SOILS; MODEL

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第 21 条, 共 60 条

标题: Investigation into geohazards during urbanization process of Xi'an, China

作者: Wang, ZF (Wang, Zhi-Feng); Cheng, WC (Cheng, Wen-Chieh); Wang, YQ (Wang, Ya-Qiong)

来源出版物: NATURAL HAZARDS 卷: 92 期: 3 页: 1937-1953 DOI: 10.1007/s11069-018-3280-5 出版年: JUL 2018

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使用次数 (最近 180 天): 28

使用次数 (2013 年至今): 56

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摘要: Xi'an is the political, cultural and economic center in Northwestern China, and the demands for urbanization are growing dramatically in the past decades. During the rapid urbanization in Xi'an, ground fissure and land subsidence have been regarded as the two striking geohazards. At present, a total of fourteen ground fissures have been detected in Xi'an, among which eight ground fissures have a high level of activity, while the other six ground fissures are of lowly active. Several land subsidence funnels appear in different regions of Xi'an, and the annual land subsidence shows a decreasing tendency after 1991, which is estimated to be around 40 mm/year in recent years. The reasons triggering geohazards can be divided as: (1) natural factors and (2) anthropogenic factors. Analysis of the countermeasures against the prevention and mitigation of geohazards indicates that public awareness is an important issue to a success of the geoenvironment protection. In addition, the existing monitoring technologies (GPS, InSAR, and GIS) together with the technical improvement in other fields are deemed to be necessary for an effective monitoring and mitigation of the geohazards.

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语言: English

文献类型: Review

作者关键词: Geohazards; Urbanization; Ground fissure; Land subsidence

KeyWords Plus: LAND SUBSIDENCE; GROUND FISSURES; PARTIAL PENETRATION; PUMPING TESTS; ACID-RAIN; SIMULATION; SHANGHAI; STRENGTH; BEHAVIOR; FAILURE

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第 22 条, 共 60 条

标题: Impacts analysis of car following models considering variable vehicular gap policies

作者: Xin, Q (Xin, Qi); Yang, N (Yang, Nan); Fu, R (Fu, Rui); Yu, SW (Yu, Shaowei); Shi, ZK (Shi, Zhongke)

来源出版物: PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS 卷: 501
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使用次数 (2013 年至今): 49

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摘要: Due to the important roles playing in the vehicles' adaptive cruise control system, variable vehicular gap polices were employed to full velocity difference model (FVDM) to investigate the

traffic flow properties. In this paper, two new car following models were put forward by taking constant time headway(CTH) policy and variable time headway(VTH) policy into optimal velocity function, separately. By steady state analysis of the new models, an equivalent optimal velocity function was defined. To determine the linear stable conditions of the new models, we introduce equivalent expressions of safe vehicular gap, and then apply small amplitude perturbation analysis and long terms of wave expansion techniques to obtain the new models' linear stable conditions. Additionally, the first order approximate solutions of the new models were drawn at the stable region, by transforming the models into typical Burger's partial differential equations with reductive perturbation method. The FVDM based numerical simulations indicate that the variable vehicular gap polices with proper parameters directly contribute to the improvement of the traffic flows' stability and the avoidance of the unstable traffic phenomena. (C) 2018 Elsevier B.V. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Car following model; Adaptive cruise control; Variable vehicular gap; Linear stability analysis; Reductive perturbation method

KeyWords Plus: TRAFFIC OSCILLATION PROPAGATION; FULL VELOCITY DIFFERENCE; ADAPTIVE CRUISE CONTROL; NONLINEAR-ANALYSIS; DENSITY WAVES; FLOW MODEL; VEHICLES

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第 23 条, 共 60 条

标题: CoO and g-C₃N₄ complement each other for highly efficient overall water splitting under visible light

作者: Guo, F (Guo, Feng); Shi, WL (Shi, Weilong); Zhu, C (Zhu, Cheng); Li, H (Li, Hao); Kang, ZH (Kang, Zhenhui)

来源出版物: APPLIED CATALYSIS B-ENVIRONMENTAL 卷: 226 页: 412-420 DOI: 10.1016/j.apcatb.2017.12.064 出版年: JUN 15 2018

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摘要: Photocatalytic hydrogen production from overall water splitting is a clean and renewable technology that can convert solar energy into chemical energy, for which developing an efficient and stable photocatalyst has been the central scientific topic. Herein, CoO/g-C₃N₄ heterojunction photocatalysts were fabricated through a facile solvothermal method for overall water splitting. Simultaneous evolution of H₂ and O₂ from pure water with the stoichiometric ratio of about 2:1

achieved with all the CoO/g-C₃N₄ heterojunctions as catalysts under visible light irradiation. Among of them, 30 wt.% CoO/g-C₃N₄ with H₂ evolution rate of 2.51 μmol/h and O₂ evolution rate of 1.39 μmol/h also exhibited remarkably higher photocatalytic performance and stability (over 15 cycles) than single CoO or g-C₃N₄. This enhanced photocatalytic activity of CoO/g-C₃N₄ heterojunction can be ascribed to the synergistic effect of junction and interface formed between CoO and g-C₃N₄. In addition, the sufficient long lifetime stability of CoO/g-C₃N₄ comes from the complementary advantages effect between CoO and g-C₃N₄, as is proved, COO can protect g-C₃N₄ from H₂O₂ poisoning, and simultaneously the photo-induced heat from CoO during the photocatalytic process responsible for the rapid deactivation can be timely conducted to g-C₃N₄.

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语言: English

文献类型: Article

作者关键词: CoO nanoparticles; g-C₃N₄; Photothermal deactivation; H₂O₂-resistance poisoning; Overall water splitting

KeyWords Plus: PHOTOCATALYTIC HYDROGEN-PRODUCTION; GRAPHITIC CARBON NITRIDE; Z-SCHEME; THERMAL-CONDUCTIVITY; ELECTRON MEDIATOR; GRAPHENE OXIDE; H-2 EVOLUTION; PERFORMANCE; HETEROJUNCTIONS; FABRICATION

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第 24 条, 共 60 条

标题: Geochemistry, Hydraulic Connectivity and Quality Appraisal of Multilayered Groundwater in the Hongdunzi Coal Mine, Northwest China

作者: Li, PY (Li, Peiyue); Wu, JH (Wu, Jianhua); Tian, R (Tian, Rui); He, S (He, Song); He, XD (He, Xiaodong); Xue, CY (Xue, Chenyang); Zhang, K (Zhang, Kang)

来源出版物: MINE WATER AND THE ENVIRONMENT 卷: 37 期: 2 特刊: SI 页: 222-237 DOI: 10.1007/s10230-017-0507-8 出版年: JUN 2018

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使用次数 (最近 180 天): 26

使用次数 (2013 年至今): 73

引用的参考文献数: 69

摘要: This study assessed the geochemistry and quality of groundwater in the Hongdunzi coal mining area in northwest China and investigated the mechanisms governing its hydrogeochemistry and the hydraulic connectivity between adjacent aquifers. Thirty-four groundwater samples were

collected for physicochemical analyses and bivariate analyses were used to investigate groundwater quality evolution. The groundwater in the mine was determined to be neutral to slightly alkaline, with high levels of salinity and hardness; most samples were of SO₄-Cl-Na type. Fluoride and nitrate pollution in the confined aquifers were identified, primarily sourced from coals. Natural geochemical processes, such as mineral dissolution, cation exchange, and groundwater evaporation, largely control groundwater chemistry. Anthropogenic inputs from agricultural and mining activities were also identified in both shallow unconfined aquifers and the deeper confined aquifers, respectively. It was determined that the middle confined aquifer has a high hydraulic connectivity with the lower coal-bearing aquifer due to developed fractures. Careful management of the overlying aquifers is required to avoid mine water inrush geohazards and groundwater quality deterioration. The groundwater in the mining area is generally of poor quality, and is unsuitable for direct human consumption or irrigation. Na⁺, SO₄²⁻, Cl⁻, F⁻, TH, TDS, NO₃⁻, and CODMn are the major factors responsible for the poor quality of the phreatic water, while Na⁺, SO₄²⁻, F⁻, and TDS are the major constituents affecting the confined groundwater quality. This study is beneficial for understanding the impacts of coal mine development on groundwater quality, and safeguarding sustainable mining in arid areas.

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语言: English

文献类型: Article

作者关键词: Mine water; Groundwater quality index; Correlation analysis; Hydrogeochemistry; Saturation index

KeyWords Plus: SHALLOW GROUNDWATER; SURFACE-WATER; PENGYANG COUNTY; MINING AREAS; HUMAN HEALTH; RIVER-BASIN; HYDROGEOCHEMISTRY; CONTAMINATION; IRRIGATION; EVOLUTION

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第 25 条, 共 60 条

标题: Landslide susceptibility modelling using GIS-based machine learning techniques for Chongren County, Jiangxi Province, China

作者: Chen, W (Chen, Wei); Peng, JB (Peng, Jianbing); Hong, HY (Hong, Haoyuan); Shahabi, H (Shahabi, Himan); Pradhan, B (Pradhan, Biswajeet); Liu, JZ (Liu, Junzhi); Zhu, AX (Zhu, A-Xing); Pei, XJ (Pei, Xiangjun); Duan, Z (Duan, Zhao)

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使用次数 (最近 180 天): 38

使用次数 (2013 年至今): 125

引用的参考文献数: 62

摘要: The preparation of a landslide susceptibility map is considered to be the first step for landslide hazard mitigation and risk assessment. However, these maps are accepted as end products that can be used for land use planning. The main goal of this study is to assess and compare four advanced machine learning techniques, namely the Bayes' net (BN), radical basis function (RBF) classifier, logistic model tree (LMT), and random forest (RF) models, for landslide susceptibility modelling in Chongren County, China. A total of 222 landslide locations were identified in the study area using historical reports, interpretation of aerial photographs, and extensive field surveys. The landslide inventory data was randomly split into two groups with a ratio of 70/30 for training and validation purposes. Fifteen landslide conditioning factors were prepared for landslide susceptibility modelling. The spatial correlation between landslides and conditioning factors was analyzed using the information gain (IG) method. The BN, RBF classifier, LMT, and RF models were constructed using the training dataset. Finally, the receiver operating characteristic (ROC) and statistical measures, including sensitivity, specificity, and accuracy, were employed to validate and compare the predictive capabilities of the models. Out of the tested models, the RF model had the highest sensitivity, specificity, and accuracy values of 0.787, 0.716, and 0.752, respectively, for the training dataset. Overall, the RF model produced an optimized balance for the training and validation datasets in terms of AUC values and statistical measures. The results of this study also demonstrate the benefit of selecting optimal machine learning techniques with proper conditioning selection methods for landslide susceptibility modelling. (C) 2018 Elsevier B.V. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Landslide susceptibility; Bayes' net; Radical basis function classifier; Logistic model tree; Random forest; China

KeyWords Plus: INFERENCE SYSTEM ANFIS; DATA MINING TECHNIQUES; LOGISTIC-REGRESSION; RANDOM FOREST; SPATIAL PREDICTION; NETWORK APPROACH; FREQUENCY RATIO; BIVARIATE; FUZZY; TREE

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第 26 条, 共 60 条

标题: GIS-based landslide susceptibility evaluation using a novel hybrid integration approach of bivariate statistical based random forest method

作者: Chen, W (Chen, Wei); Xie, XS (Xie, Xiaoshen); Peng, JB (Peng, Jianbing); Shahabi, H (Shahabi, Himan); Hong, HY (Hong, Haoyuan); Bui, DT (Dieu Tien Bui); Duan, Z (Duan, Zhao); Li, SJ (Li, Shaojun); Zhu, AX (Zhu, A-Xing)

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摘要: Taibai County is a mountainous area in China, where rainfall-induced landslides occur frequently. The purpose of this study is to assess landslide susceptibility using the integrated Random Forest (RF) with bivariate Statistical Index (SI), the Certainty Factor (CF), and Index of Entropy (IDE). For this purpose, a total of 212 landslides for the study area were identified and collected. Of these landslides, 70% (148) were selected randomly for building the models and the other landslides (64) were used for validating the models. Accordingly, 12 landslide conditioning factors were considered that involve altitude, slope angle, plan curvature, profile curvature, slope aspect, distance to roads, distance to faults, distance to rivers, rainfall, NDVI, land use, and lithology. Then, the spatial correlation between conditioning factors and landslides was analysed using the RF method to quantify the predictive ability of these factors. In the next step, three landslide models, the RF-SI, RF-CF and RF-IOE, were constructed using the training dataset. Finally, the receiver operating characteristic (ROC) and statistical measures such as the kappa index, positive predictive rates, negative predictive rates, sensitivity, specificity, and accuracy were employed to validate and compare the predictive capability of the three models. Of the models, the RF-CF model has the highest positive predictive rate, specificity, accuracy, kappa index and AUC values of 0.838, 0.824, 0.865, 0.730 and 0.925 for the training data, and the highest positive predictive rate, negative predictive rate, sensitivity, specificity, accuracy, kappa index and AUC values of 0.896, 0.934, 0.938, 0.891, 0.914, 0.828, and 0.946 for the validation data, respectively. In general, the RF-CF model produced an optimized balance in terms of AUC values and statistical measures.

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语言: English

文献类型: Article

作者关键词: Landslide; Statistical Index; Certainty Factor; Index of Entropy; Random Forest

KeyWords Plus: LOGISTIC-REGRESSION MODELS; SUPPORT VECTOR MACHINES; INFERENCE SYSTEM ANFIS; DATA MINING TECHNIQUES; HOA BINH PROVINCE; SPATIAL PREDICTION; FREQUENCY RATIO; CERTAINTY FACTOR; DIFFERENTIAL EVOLUTION; HIERARCHY PROCESS

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第 27 条, 共 60 条

标题: Principal Stress Rotation under Bidirectional Simple Shear Loadings

作者: Li, Y (Li, Yao); Yang, YM (Yang, Yunming); Yu, HS (Yu, Hai-Sui); Roberts, G (Roberts, Gethin)

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摘要: Previous researches have indicated the non-coaxiality of sand in unidirectional simple shear tests, in which the direction of the principal axes of stresses does not coincide with the corresponding principal axes of strain rate tensors. Due to the limitation of apparatus that most of testing facilities can only add shear stress in one direction, the influence of stress history on the noncoaxiality of sand is not fully considered in previous tests. In this study, the effect of stress history on the non-coaxiality of sand is systematically studied by using the first commercially available Variable Direction Dynamic Cyclic Simple Shear system (VDDCSS). Samples of Leighton Buzzard sand (Fraction B) are first consolidated under a vertical confining stress and consolidation shear stress, and then sheared by a drained monotonic shear stress. Angle (θ) between the consolidation shear stress and the drained monotonic shear stress is varied from 0 degrees to 180 degrees, with an interval of 30 degrees. The change of principal axes of stresses is predicted by well-established equations, and the principal axis of strain rate is calculated using recorded data. Results show that the level of non-coaxiality is increased by the increasing θ , especially at the initial stage of drained shearing.

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语言: English

文献类型: Article

作者关键词: Principal stress rotation; noncoaxial behavior; simple shear; sand; orientation of principal stress

KeyWords Plus: SAND; SOIL; LIQUEFACTION; MODEL; FLOW

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第 28 条, 共 60 条

标题: Distribution and characteristics of landslide in Loess Plateau: A case study in Shaanxi province

作者: Zhuang, JQ (Zhuang, Jianqi); Peng, JB (Peng, Jianbing); Wang, GH (Wang, Gonghui); Javed, I (Javed, Iqbal); Wang, Y (Wang, Ying); Li, W (Li, Wei)

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摘要: Every year about one third of the geohazards in China occur in the Loess Plateau causing human loss, damaging gas and oil pipelines, destroying highways, railways and degrading farmland. Field investigation and monitoring, in-situ tests and laboratory experiments were performed to improve our understanding of the factors effecting the distribution, characteristics and causes of loess landslides. First, we find that 79% of the landslides are shallower than 10m, 85% have a volume of less than 100,000 m³. Second, landslides on the Loess Plateau occur primarily on concave slope profiles that have slope angles of 20-35 degrees and that face south-east. Third, the equivalent coefficient of friction of loess landslides is very low resulting in long run-out with a low angle sliding surface. Loess landslides generally transform into mud-flows resulting in an increase in volume in transit and forming a geohazard chain. Antecedent rainfall plays an important role in triggering loess landslides. Finally, clusters of landslides in the Loess Plateau occur because the loess easily disintegrates under high pressure due to its loose and highly porous structure. There is a sharp decrease in cohesive strength with increase in deformation and water content and thus landslides tend to undergo static liquefaction during sliding. (C) 2017 Elsevier B.V. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Loess landslide; Distribution; Characteristics; Landslide mechanics; Loess Plateau

KeyWords Plus: DEBRIS FLOWS; RAINFALL; SUSCEPTIBILITY

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第 29 条, 共 60 条

标题: MOF-derived porous N-Co₃O₄@N-C nanododecahedra wrapped with reduced graphene oxide as a high capacity cathode for lithium-sulfur batteries

作者: Xu, J (Xu, Jing); Zhang, WX (Zhang, Wenxue); Chen, Y (Chen, Yi); Fan, HB (Fan, Hongbo); Su, DW (Su, Dawei); Wang, GX (Wang, Guoxiu)

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摘要: The lithium-sulfur (Li-S) battery has been regarded as a highly promising rechargeable energy-storage system due to its high energy density of 2567 W h kg⁻¹. However, moderating the dissolution of lithium polysulfides (LiPSs) and enhancing the conductivity of the sulfur cathode are the main limitations for its successful application. Herein, we demonstrate an approach to simultaneously tackle these two barriers by designing a porous N-Co₃O₄@N-C nanododecahedral composite. This composite was derived from ZIF-67 via a facile pyrolysis method, which realizes the effective doping of nitrogen into both Co₃O₄ and the carbon framework, simultaneously achieving a well-defined porous structure. After wrapping with reduced graphene oxide (rGO), this porous N-Co₃O₄@N-C/rGO cathode supported a high sulfur loading (5.89 mg cm⁻²) and exhibited excellent stability (611 mA h g⁻¹) at 2C after 1000 cycles). Furthermore, ex situ Raman spectroscopy, ex situ X-ray photoelectron spectroscopy, UV-vis absorption spectroscopy and first-principles calculations confirm that the N-Co₃O₄@N-C/rGO nanododecahedra effectively bind LiPSs in the electrode over multiple cycles. This proved that the cobalt oxides in the porous N-Co₃O₄@N-C nanododecahedra have strong affinity for binding LiPSs. The simultaneous doping of nitrogen both into the cobalt oxides and carbon framework not only strengthened the binding energy for LiPSs absorption, but also improved the overall conductivity of the nanododecahedra. Moreover, the interconnected porous structure contributes to the electron transfer and alleviates the volume changes of active materials during cycling.

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KeyWords Plus: OXYGEN REDUCTION REACTION; METAL-ORGANIC FRAMEWORK; LI-S BATTERIES; CARBON POLYHEDRA; PERFORMANCE; NITROGEN; POLYSULFIDES; SHELL; IDENTIFICATION; NANOSHEETS

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第 30 条, 共 60 条

标题: Relative velocity difference model for the car-following theory

作者: Yu, SW (Yu, Shaowei); Tang, JJ (Tang, Jinjun); Xin, Q (Xin, Qi)

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摘要: To explore and evaluate the impacts of relative velocity difference (RVD) with memory on the dynamic characteristics and fuel economy of traffic flow in the intelligent transportation environment, we first analyze the linkage between RVD with different-step memory and the following car's behaviors with the measured car-following (CF) data in cities by using the gray correlation analysis method and then present a RVD model based on the previous CF models in the literatures and calibrate it. Finally, we conduct several numerical simulations in the adaptive cruise control (ACC) strategy to explore how RVD with memory affects car's velocity fluctuation and fuel consumptions, and find that the RVD model can describe the phase transition of traffic flow and estimate the evolution of traffic congestion, and that considering RVD with memory in modeling CF behaviors and designing the advanced ACC strategy can improve the stability and fuel economy of traffic flow.

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语言: English

文献类型: Article

作者关键词: Car-following model; Relative velocity difference with memory; Traffic flow stability; Fuel economy; The ACC system

KeyWords Plus: CRUISE-CONTROL-SYSTEMS; STABILITY ANALYSIS; TRAFFIC FLOW; ENERGY-CONSUMPTION; FUEL CONSUMPTION; DRIVER MEMORY; FULL VELOCITY; VEHICLES; TIME; DYNAMICS

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标题: A state-of-the-art review of sustainable energy based freeze proof technology for cold-region tunnels in China

作者: Lai, JX (Lai, Jinxing); Wang, XL (Wang, Xiuling); Qiu, JL (Qiu, Junling); Zhang, GZ (Zhang, Guozhu); Chen, JX (Chen, Jianxun); Xie, YL (Xie, Yongli); Luo, YB (Luo, Yanbin)

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摘要: To cope with tunnel frost damage, studies on prevention methods are routinely conducted to improve environmental protection and energy saving. Based on field investigations, the main available thermal insulation methods and their application are discussed and analysed in this paper. The results show that passive measures, such as a thermal insulation layer or door, cannot completely avoid frost damage. Construction investment of the electric heat tracing (EHT) system is lower at the early stage, but a large investment in operation and pollution problems are needed in the later period. As renewable, clean and environmentally friendly primary energy, geothermal energy can realize energy-saving and emission-reduction. Furthermore, our research team proposed the optimization design method for tunnel heat insulation and anti-freezing by using geothermal energy and presented the challenges for future applications of the ground-source heat pump (GSHP) system in tunnels. The results regarding energy conservation from this review can provide useful technical support in design, operation and management of tunnels in cold regions.

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语言: English

文献类型: Review

作者关键词: Cold-region tunnel; Freeze proof; Geothermal energy; In-situ observation; Design optimization; Energy-saving

KeyWords Plus: OPTIMUM INSULATION THICKNESS; GROUND HEAT-EXCHANGERS; THERMAL PERFORMANCE; MODEL; PILE; TEMPERATURE; CONDUCTION; FOUNDATIONS; VENTILATION; CONCRETE

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标题: Cracking and Failure in Rock Specimen Containing Combined Flaw and Hole under Uniaxial Compression

作者: Fan, X (Fan, Xiang); Chen, R (Chen, Rui); Lin, H (Lin, Hang); Lai, HP (Lai, Hongpeng); Zhang, CY (Zhang, Chunyang); Zhao, QH (Zhao, Qihua)

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摘要: Flaw is a key factor influencing failure behavior of a fractured specimen. In the present study, rectangular-flawed specimens were prepared using sandstone to investigate the effect of flaw on failure behavior of rock. Open flaw and cylindrical hole were simultaneously pre-cut within rock specimens using high-pressure water jet cutting technology. Five series of specimens including intact, single-hole-alone, two-hole-alone, single-hole and two-flaw, and two-hole and single-flaw blocks were prepared. Uniaxial compressive tests using a rigid servo control instrument were carried out to investigate the fracture processes of these flawed specimens. It is observed that during loading, internal stress always intensively distributed at both sidewalls of open hole, especially at midpoint of sidewalls, so rock crumb flaking was firstly observed among all sandstone specimens containing single hole or two holes. Cracking around open hole is associated with the flaw inclination angle which was observed in Series III and V. Crack easily initiated at the tips of flaw with inclination angles of 0 degrees, 30 degrees, and 60 degrees but hard for 90 degrees in Series III and V. Rock burst was the major failure mode among most tested specimens, which generally induced new cracks and finally created crater shape. Additionally, due to extrusion between blocks, new shear or tensile cracks were generated and the rock specimen surface spalled. Eventually, four typical failure processes including rock crumb flaking, crack initiation and propagation, rock burst, and second rupture, were summarized.

入藏号: WOS:000432056100001

语言: English

文献类型: Article

KeyWords Plus: EXCAVATION DAMAGED ZONE; BIAXIAL COMPRESSION; BRITTLE-FRACTURE; NONPERSISTENT JOINTS; CYLINDRICAL OPENINGS; MECHANICAL-BEHAVIOR; MASS MODELS; COALESCENCE; PROPAGATION; GROWTH

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ESI 高被引论文: Y

ESI 热点论文: N

第 33 条, 共 60 条

标题: Displacement and Stress Characteristics of Tunnel Foundation in Collapsible Loess Ground Reinforced by Jet Grouting Columns

作者: Li, YY (Li, Youyun); Xu, SS (Xu, Shuoshuo); Liu, HQ (Liu, Houquan); Ma, EL (Ma, Enlin); Wang, LX (Wang, Lixin)

来源出版物: ADVANCES IN CIVIL ENGINEERING 文献号: 2352174 DOI: 10.1155/2018/2352174 出版年: 2018

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使用次数 (最近 180 天): 10

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摘要: Collapsible loess tunnel foundation reinforcement is a new challenge in the construction process of tunnel engineering. According to the field displacement and stress monitoring of the Fujiayao loess tunnel, this paper investigates the reinforcing effect of a high-pressure jet grouting pile on a collapsible loess tunnel foundation in the deep large-span tunnel. The field monitoring method was employed to address the performance of tunnel foundation settlement, additional stress, earth pressure, rock pressure, etc. The results indicate that the stress on the pile tops and the earth pressure between piles increase gradually over time in two stages: stress increases rapidly in the first 45 days and, after this period, stress tends to gradually stabilize. Further, stress increases uniformly with the distance from the centerline of the tunnel, and the rock pressure of the tunnel sidewalls tends to be stable within two months of being constructed. Additional stress on the tunnel foundation increases linearly with time, and it is uniformly distributed in the vertical and horizontal directions of the tunnel section. Settlement of the tunnel foundation also gradually increases with time, and it tends to be stable at 50 days from the time of construction. Additionally, the settlements of different monitoring points are similar at the same depth. The research results will further improve the theoretical knowledge of tunnel bottom reinforcement in the loess tunnel, which not only can effectively guide the design and construction of the loess tunnel and reduce disease treatment cost but also can provide the necessary basic research data and scientific theoretical basis for revision of the corresponding specifications of highway tunnels and railway tunnels.

入藏号: WOS:000446014000001

语言: English

文献类型: Article

KeyWords Plus: CONSTITUTIVE MODEL; RAILWAY; STABILITY; RESPONSES; CHINA

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ESI 高被引论文: Y

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第 34 条, 共 60 条

标题: Numerical Investigation of Particle Concentration Distribution Characteristics in Twin-Tunnel Complementary Ventilation System

作者: Ren, R (Ren, Rui); Xu, SS (Xu, Shuoshuo); Ren, ZD (Ren, Zhaodan); Zhang, SZ (Zhang, Shuangzhuo); Wang, H (Wang, Hao); Wang, XL (Wang, Xiuling); He, SY (He, Siyue)

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使用次数 (最近 180 天): 9

使用次数 (2013 年至今): 40

引用的参考文献数: 72

摘要: Longitudinal ventilation systems are commonly installed in new tunnels. In this paper, based on the similarity law, the scale model with a view to different conditions is carried out to study the effectiveness of twin-tunnel complementary ventilation system. The system can offer enough amount of fresh air to meet requirement of driving safety by using longitudinal ventilation without ventilation shaft. Field measurements were also performed to validate the numerical model. Results reveal that particle concentration distribution is influenced by the distance from air interchange cross-passages to uphill tunnel inlet (L-ex) and the flow volume of air interchange cross (Q(ex)) passage and jet fan thrust (P-jet) in tunnel. And L-ex is the most important factor about influencing the ventilation efficiency.

入藏号: WOS:000439718300001

语言: English

文献类型: Article

KeyWords Plus: ROAD TUNNEL; NATURAL VENTILATION; TRANSVERSE VENTILATION; MAXIMUM TEMPERATURE; CONSTITUTIVE MODEL; SMOKE EXTRACTION; THERMAL COMFORT; FIRE; FLOW; REGION

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ESI 高被引论文: Y

ESI 热点论文: N

第 35 条, 共 60 条

标题: Simple Method to Predict Ground Displacements Caused by Installing Horizontal Jet-Grouting Columns

作者: Wang, ZF (Wang, Zhi-Feng); Shen, JS (Shen, Jack S.); Cheng, WC (Cheng, Wen-Chieh)

来源出版物: MATHEMATICAL PROBLEMS IN ENGINEERING 文献号: 1897394 DOI: 10.1155/2018/1897394 出版年: 2018

Web of Science 核心合集中的 "被引频次": 24

被引频次合计: 24

使用次数 (最近 180 天): 4

使用次数 (2013 年至今): 19

引用的参考文献数: 57

摘要: During the horizontal jet grouting in soft ground, injection of large volumes of water and grout into the soil can lead to significant ground displacements. A simple method is proposed in this paper to predict the ground displacements caused by installing horizontal jet-grouting columns. The process of installing a horizontal column is simplified as the expansion of a cylindrical cavity with a uniform radial stress applied at plastic-elastic interface in a half plane. In this study, the analytical solution is adopted to calculate the deformation induced by the expansion of a cylindrical cavity. Considering the main jetting parameters (jetting pressure of the fluid, flow rate of the fluid, and withdrawal rate of the rod) and the soil properties (stiffness of the surrounding soil), an empirical equation to estimate the radius of plastic zone is developed. Two field tests are carried out in Shanghai, China, to verify the correctness and applicability of the proposed method. Comparisons between the predicted and measured values indicate that the proposed method can provide a reasonable prediction. The proposed simple method can be recommended as a useful tool for the design of ground improvement by means of horizontal jet grouting.

入藏号: WOS:000424800500001

语言: English

文献类型: Article

KeyWords Plus: LATERAL DISPLACEMENT; PUMPING TESTS; SOFT DEPOSITS; FIELD TRIAL; TUNNELS; INSTALLATION; TECHNOLOGY; EXCAVATION; MARINE; SYSTEM

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ESI 高被引论文: Y

ESI 热点论文: N

第 36 条, 共 60 条

标题: Nature and origin of Triassic igneous activity in the Western Qinling Orogen: the Wenquan composite pluton example

作者: Qiu, KF (Qiu, Kun-Feng); Yu, HC (Yu, Hao-Cheng); Gou, ZY (Gou, Zong-Yang); Liang, ZL (Liang, Zhi-Lu); Zhang, JL (Zhang, Jia-Lin); Zhu, R (Zhu, Rui)

来源出版物: INTERNATIONAL GEOLOGY REVIEW 卷: 60 期: 2 页: 242-266 DOI: 10.1080/00206814.2017.1334598 出版年: 2018

Web of Science 核心合集中的 "被引频次": 15

被引频次合计: 15

使用次数 (最近 180 天): 7

使用次数 (2013 年至今): 21

引用的参考文献数: 121

摘要: The Western Qinling has been acknowledged to witness superimposed orogeny including north subduction of Paleotethys ocean and collision between North China and South China blocks; however, the precise timing constraints on transition of tectonic regime are remaining enigmatic. The Wenquan composite batholith comprising five phases and mafic enclaves is an ideal example to unlock this puzzle. The host granitoids are felsic, metaluminous to peraluminous, and high-K calc-alkaline to shoshonitic suite with I-type affinity. The mafic enclaves, however, are intermediate, and high-K calc-alkaline to shoshonitic. Zircon ages of multiple phases indicate an episodic growth lasting nearly 30 million years ranging from 238, 228, 218 to 208Ma, consistent to Triassic igneous activity recording a transition regime from a subduction setting to a syn-collision setting and a post-collision setting in Western Qinling. Lead isotopes of whole-rock and K-feldspar at Wenquan and Lu-Hf isotopes of zircons separated from biotite monzogranite porphyry, porphyritic monzogranite, monzogranite porphyry, and hosted mafic enclaves suggest that the heat and the hot mafic melt initiated by the break-off of the northward subducting South China block lithosphere triggered partial melting of the Mesoproterozoic subcontinental lithospheric mantle to produce mafic magmas, and the underplated mafic magmas caused partial melting of the shallow subducted Mesoproterozoic lower crust generating granitic magmas at Wenquan. Combined our field observations and petrology study with a holistic review on previous geochronological and geochemical data of Triassic granitoids throughout the Western Qinling, we in this contribution proposed that the Triassic igneous activity in the Western Qinling corresponding to superimposed orogeny evolved from the northward subduction of Palaeotethys ocean (250-235Ma) through syn-collision (228-215Ma) to post-collision (215-185Ma) between the North China and South China blocks.

入藏号: WOS:000418932900006

语言: English

文献类型: Review

作者关键词: Nature and origin; Wenquan composite batholith; Triassic igneous activity; superimposed orogeny; Western Qinling

KeyWords Plus: ZIRCON U-PB; PORPHYRY MOLYBDENUM DEPOSIT; CALC-ALKALINE GRANITOIDS; TECTONIC EVOLUTION; CHINA CONSTRAINTS; ISOTOPIC COMPOSITIONS; GOLD DEPOSIT; JIAODONG PENINSULA; SOUTHWEST CHINA; GEOCHEMISTRY

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ESI 热点论文: N

第 37 条, 共 60 条

标题: The catastrophic landslide in Maoxian County, Sichuan, SW China, on June 24, 2017

作者: Qiu, JL (Qiu, Junling); Wang, XL (Wang, Xiuling); He, SY (He, Siyue); Liu, HQ (Liu, Houquan); Lai, JX (Lai, Jinxing); Wang, LX (Wang, Lixin)

来源出版物: NATURAL HAZARDS 卷: 89 期: 3 页: 1485-1493 DOI: 10.1007/s11069-017-3026-9 出版年: DEC 2017

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使用次数 (最近 180 天): 12

使用次数 (2013 年至今): 111

引用的参考文献数: 23

摘要: This short communication gives a brief investigation of the catastrophic natural landslides in the Diexi town, Maoxian County, Sichuan province, SW China, which occurred on June 24, 2017. According to the preliminary statistics of Sichuan government, about 73 people lost contact, and 62 houses and more than 1600 m roads were buried. The collapse volume of landslide is approximately 8 million m³. The maximum drop is about 1600 m, and plane sliding distance is 2500-3000 m. Unfortunately, the secondary collapse incident occurred repeatedly on June 25 and 27, respectively. In this communication, the accident background, accident scene, and related emergency response are presented. In virtue of the in situ reconnaissance conducted by geological experts, the main reason for the collapse is the high-level and long-distance debris flow in earthquake fracture zone induced by continuous rainfall.

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语言: English

文献类型: Article

作者关键词: Landslide; Natural disaster; High-level and long-distance debris flow; Earthquake fracture zone; Rainfall

KeyWords Plus: EARTHQUAKE; MODEL

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第 38 条, 共 60 条

标题: Mesoporous manganese oxide with large specific surface area for high-performance asymmetric supercapacitor with enhanced cycling stability

作者: Gu, JM (Gu, Jianmin); Fan, XY (Fan, Xiaoyong); Liu, X (Liu, Xin); Li, SH (Li, Siheng); Wang, Z (Wang, Zhuang); Tang, SF (Tang, Shoufeng); Yuan, DL (Yuan, Deling)

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使用次数 (最近 180 天): 22

使用次数 (2013 年至今): 179

引用的参考文献数: 49

摘要: Boosting the energy density of supercapacitors without sacrificing their power capability and cyclability is highly desired. Herein, we reported high-performance asymmetric supercapacitor device with high cycling stability using mesoporous manganese oxide nanococoons (MONCs) as positive electrode, and activated carbon (AC) as negative electrode. The mesoporous manganese oxide nanococoons exhibit excellent electrochemical performances because of their large surface area. The optimized asymmetric supercapacitor could be cycled reversibly in the high voltage range of 0-1.7 V in aqueous electrolyte, which exhibits a maximum energy density of 32 Wh kg⁻¹ at a power density of 185 W kg⁻¹ and still remains 21 Wh kg⁻¹ at a power density of 1630 W kg⁻¹. Importantly, such asymmetric supercapacitor exhibits superior long cycle life with similar to 100% specific capacitance retained after similar to 2700 cycles and similar to 98% after 5000 cycles. (C) 2017 Elsevier B.V. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Asymmetric supercapacitor; Enhanced cycling stability; High energy density; Large specific surface area; Mesoporous manganese oxide

KeyWords Plus: ENERGY-CONVERSION; ACTIVATED CARBON; STORAGE; PROGRESS; DIOXIDE; FILM; ELECTRODES; NANOWIRES; CAPACITY; ANODES

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ESI 高被引论文: Y
ESI 热点论文: N

第 39 条, 共 60 条

标题: Fluid and metal sources of the Wenquan porphyry molybdenum deposit, Western Qinling, NW China

作者: Qiu, KF (Qiu, Kun-Feng); Marsh, E (Marsh, Erin); Yu, HC (Yu, Hao-Cheng); Pfaff, K (Pfaff, Katharina); Gulbransen, C (Gulbransen, Cayce); Gou, ZY (Gou, Zong-Yang); Li, N (Li, Nan)

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Web of Science 核心合集中的 "被引频次": 33

被引频次合计: 34

使用次数 (最近 180 天): 4

使用次数 (2013 年至今): 29

引用的参考文献数: 92

摘要: The Wenquan porphyry molybdenum deposit, Western Qinling, NW China, with a resource of 247 million tonnes at 0.048% Mo, formed during Triassic collision between South China and North China blocks. Ore fluids at Wenquan vary widely in composition from single-phase, low-salinity aqueous to low-salinity vapor, and hypersaline inclusions. Fluid inclusion assemblages in a quartz-molybdenite vein contain >60 vol% vapor, are equant to negative-crystal shaped, and form clusters or distinct inclusion trails. They yield homogenization temperatures of 285-295 degrees C, with an estimated trapping temperature of 425 degrees C, suggesting a paleodepth of about 5 km calculated at a pressure correction of 100-150 MPa. Hydrothermal K-feldspar from early stockwork veins related to potassic alteration have calculated delta O-18(fluid) values of -1.9 parts per thousand to +1.9 parts per thousand. Hydrothermal sericite from an overprinting phyllic alteration associated with late quartz-pyrite veins has calculated delta D-fluid values between -68 and -60‰, and delta O-18(fluid) values from -3.7 to +1.4 parts per thousand. These isotopic data suggest that both early- and late-stage fluids are dominated by magmatic fluids, with influx of meteoric water during the late stage. Exsolution of volatiles from magma in a late-stage open system, results in more variable delta D values than an earlier closed-system.

Molybdenite and pyrite have 8345 values ranging from 1.1 parts per thousand to 6.6 parts per thousand, indicating that sulfur at Wenquan had a magmatic source. A linear relationship between 8345 values of sulfides separated from early potassic alteration and late phyllic alteration could reflect incorporation of isotopically heavy evaporate sulfate into source magmas from underlying Devonian sedimentary rocks during late alteration. The delta Fe-56 whole-rock values of altered porphyries range from 0.08 parts per thousand to 0.26 parts per thousand, similar to delta Fe-56 values of 0.15 parts per thousand-0.32 parts per thousand for pyrite from quartz veins related to both the potassic and phyllic alteration assemblages. The delta Fe-56 values of pyrite are positively correlated to, but in general slightly lighter than, those of altered porphyries, indicating similar metal sources. Moreover, both altered porphyries and the pyrite are progressively enriched in heavy Fe isotopes from biotite, through potassic to late phyllic alteration, consistent with isotopic evolution from an early lithostatic load to a late hydrostatic load.

The Triassic intrusive rocks and fluids responsible for mineralization were derived from a deeply sourced hybrid mantle-crustal magma crystallizing at a paleodepth of 5 km under lithostatic load. External Late Triassic meteoric or Devonian formational fluids became a part of the hydrothermal system during the post-fracturing final stage of ore formation under a hydrostatic regime. The formation of the Wenquan magmatic-hydrothermal systems spans the ductile-brittle transition based on a normal thermal gradient as constrained by the temperature range of 550-300 degrees C.

The early, high-temperature potassic alteration developed under a ductile regime, whereas the later, low-temperature phyllic alteration correlates to a brittle environment, where hydraulic rock fracturing enhances permeability and fluid circulation. Most sulfur and metals were precipitated from vapor-rich fluids resulting from cooling and expansion of a single-phase fluid exsolved from a hybrid magma. (C) 2017 Elsevier B.V. All rights reserved.

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作者关键词: Microthermometry; H-O-S-Fe isotopes; Fluid and metal sources; Wenquan porphyry deposit; Western Qinling

KeyWords Plus: STABLE-ISOTOPE; MINERAL SYSTEMS; COPPER-DEPOSIT; GOLD DEPOSIT; MO DEPOSIT; EPITHERMAL TRANSITION; TECTONIC EVOLUTION; EASTERN TIANSHAN; SANJIANG REGION; SOUTHWEST CHINA

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第 40 条, 共 60 条

标题: Progress, opportunities, and key fields for groundwater quality research under the impacts of human activities in China with a special focus on western China

作者: Li, PY (Li, Peiyue); Tian, R (Tian, Rui); Xue, CY (Xue, Chenyang); Wu, JH (Wu, Jianhua)

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摘要: Groundwater quality research is extremely important for supporting the safety of the water supply and human health in arid and semi-arid areas of China. This review article was constructed to report the latest research progress of groundwater quality in western China where groundwater quality is undergoing fast deterioration because of fast economic development and extensive anthropogenic activities. The opportunities brought by increasing public awareness of groundwater quality protection were also highlighted and discussed. To guide and promote further development of groundwater quality research in China, especially in western China, ten key groundwater quality research fields were proposed. The review shows that the intensification of human activities and the associated impacts on groundwater quality in China, especially in western China, has made groundwater quality research increasingly important, and has caught the attention of local, national, and international agencies and scholars. China has achieved some

progress in groundwater quality research in terms of national and regional laws, regulations, and financial supports. The future of groundwater quality research in China, especially in western China, is promising reflected by the opportunities highlighted. The key research fields proposed in this article may also inform groundwater quality protection and management at the national and international level.

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KeyWords Plus: HEALTH-RISK ASSESSMENT; CITIZEN-SCIENCE; SHALLOW GROUNDWATER; DRINKING-WATER; CONTAMINATION; NITRATE; BASIN; ISOTOPE; PLAIN; DELTA-O-18

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第 41 条, 共 60 条

标题: Characteristics of seismic disasters and aseismic measures of tunnels in Wenchuan earthquake

作者: Lai, JX (Lai, Jinxing); He, SY (He, Siyue); Qiu, JL (Qiu, Junling); Chen, JX (Chen, Jianxun); Wang, LX (Wang, Lixin); Wang, K (Wang, Ke); Wang, JB (Wang, Junbao)

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摘要: Over the past few years, accompanied by big and frequent earthquakes, more attention was paid to the tunnel earthquake resistance. To reduce tunnel seismic damage and explore the

reasonable aseismic measures, the tunnel earthquake disaster investigation was employed to analyze and summarize the tunnel seismic damage on the basis of Wenchuan earthquake. Fifty-two tunnels near the epicenter of Sichuan Province were investigated: Only 7 tunnels did not show structure damage, 6 tunnels suffered the most serious damage, and the rest appeared damage to various extents. It indicates that most serious seismic damage happens to fault fracture zone, followed by entrance and common section of the tunnel. Additionally, the results display that the typical seismic damage of tunnels is lining cracking, collapsing, dislocation, construction joints cracking, and uplifting of invert, and usually lining cracking and collapsing account for a larger proportion. Therefore, the tunnel aseismic design should emphasize the fault fracture zone and tunnel entrance. Tunnel design should adopt the composite lining structure with shock absorber and whole chain alternative grouting to prevent the lining cracking and collapsing in the seismic fortification zone.

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作者关键词: Tunnel; Earthquake resistance; Seismic damage; Disaster investigation; Wenchuan earthquake

KeyWords Plus: INDUCED VIBRATION; MOUNTAIN TUNNELS; DAMAGE; DESIGN; PORTALS

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标题: GIS-based landslide susceptibility modelling: a comparative assessment of kernel logistic regression, Naive-Bayes tree, and alternating decision tree models

作者: Chen, W (Chen, Wei); Xie, XS (Xie, Xiaoshen); Peng, JB (Peng, Jianbing); Wang, JL (Wang, Jiale); Duan, Z (Duan, Zhao); Hong, HY (Hong, Haoyuan)

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摘要: The main purpose of this paper is to explore some potential applications of sophisticated machine learning techniques such as the kernel logistic regression, Naive-Bayes tree and alternating decision tree models for landslide susceptibility analysis at Taibai county (China). Initially, a landslide inventory map containing the information of 212 historical landslide locations was prepared. Seventy percentage (148) of landslides were randomly selected for training models and the remaining were used for validation. Additionally, 12 landslide conditioning factors were considered and the thematic layers were prepared in GIS. Subsequently, these three models were applied to build landslide susceptibility maps. The performances of the models were compared using the receive operating characteristic curves, kappa index, and statistical evaluation measures. The results show that the KLR model has the highest AUC values of 0.910 and 0.936 for training and validation datasets, respectively. The KLR model also has the highest degree of goodness-of-fits (84.5%) for the training dataset. The NBTree model has the highest goodness-of-fits (91.4%) for the validation dataset. However, the KLR model has the preferable balance performance for both the training and validation process. The results of this study demonstrate the benefit of selecting the optimal machine learning techniques in landslide susceptibility mapping.

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语言: English

文献类型: Article

作者关键词: Landslide susceptibility; kernel logistic regression; Naive-Bayes tree; alternating decision tree; China

KeyWords Plus: SUPPORT VECTOR MACHINES; ANALYTICAL HIERARCHY PROCESS; SPATIAL PREDICTION; FREQUENCY RATIO; EVENTS APPLICATION; RANDOM FOREST; FUZZY-LOGIC; MULTIVARIATE; BIVARIATE; PROVINCE

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第 43 条, 共 60 条

标题: Single Image Super-Resolution via Locally Regularized Anchored Neighborhood Regression and Nonlocal Means

作者: Jiang, JJ (Jiang, Junjun); Ma, X (Ma, Xiang); Chen, C (Chen, Chen); Lu, T (Lu, Tao); Wang, ZY (Wang, Zhongyuan); Ma, JY (Ma, Jiayi)

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摘要: The goal of learning-based image super resolution (SR) is to generate a plausible and visually pleasing high-resolution (HR) image from a given low-resolution (LR) input. The SR problem is severely underconstrained, and it has to rely on examples or some strong image priors to reconstruct the missing HR image details. This paper addresses the problem of learning the mapping functions (i.e., projection matrices) between the LR and HR images based on a dictionary of LR and HR examples. Encouraged by recent developments in image prior modeling, where the state-of-the-art algorithms are formed with nonlocal self-similarity and local geometry priors, we seek an SR algorithm of similar nature that will incorporate these two priors into the learning from LR space to HR space. The nonlocal self-similarity prior takes advantage of the redundancy of similar patches in natural images, while the local geometry prior of the data space can be used to regularize the modeling of the nonlinear relationship between LR and HR spaces. Based on the above two considerations, we first apply the local geometry prior to regularize the patch representation, and then utilize the nonlocal means filter to improve the super-resolved outcome. Experimental results verify the effectiveness of the proposed algorithm compared with the state-of-the-art SR methods.

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语言: English

文献类型: Article

作者关键词: Anchored neighborhood regression; locality geometry; neighbor embedding; nonlocal means; super-resolution (SR)

KeyWords Plus: SPARSE REPRESENTATION; FACE SUPERRESOLUTION; INTERPOLATION; HALLUCINATION; REGISTRATION; RESOLUTION; ALGORITHM; LIMITS

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第 44 条, 共 60 条

标题: A New High Algebraic Order Efficient Finite Difference Method for the Solution of the Schrodinger Equation

作者: Dong, M (Dong, Ming); Simos, TE (Simos, Theodore E.)

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摘要: The development of a new five-stages symmetric two-step method of fourteenth algebraic order with vanished phase-lag and its first, second, third and fourth derivatives is analyzed in this paper. More specifically: (1) we will present the development of the new method, (2) we will determine the local truncation error (LTE) of the new proposed method, (3) we will analyze the local truncation error based on the radial time independent Schrodinger equation, (4) we will study the stability and the interval of periodicity of the new proposed method based on a scalar test equation with frequency different than the frequency of the scalar test equation used for the phase-lag analysis, (5) we will test the efficiency of the new obtained method based on its application on the coupled differential equations arising from the Schrodinger equation.

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语言: English

文献类型: Article

作者关键词: Schrodinger equation; multistep methods; Multistage methods; interval of periodicity; phase-lag; phase-fitted; derivatives of the phase-lag

KeyWords Plus: VANISHED PHASE-LAG; INITIAL-VALUE-PROBLEMS; SYMMETRIC 2-STEP METHOD; P-STABLE METHOD; TRIGONOMETRICALLY-FITTED METHODS; PREDICTOR-CORRECTOR METHOD; KUTTA-NYSTROM METHODS; NUMERICAL-SOLUTION; MULTISTEP METHODS; ORBITAL PROBLEMS

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第 45 条, 共 60 条

标题: A High-Order Two-Step Phase-Fitted Method for the Numerical Solution of the Schrodinger Equation

作者: Zhang, W (Zhang, Wei); Simos, TE (Simos, T. E.)

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摘要: In this paper, we will develop a four-stage high algebraic order symmetric two-step method with vanished phase-lag and its first up to the fourth derivative. For the proposed method, we will study the following: the phase-lag analysis of the new method; the development of the new

method; the local truncation error analysis which is based on the radial Schrodinger equation; the stability and the interval of periodicity analysis which is based on a scalar test equation with frequency different than the frequency of the scalar test equation used for the phase-lag analysis; the error estimation procedure which is based on the algebraic order; and the numerical results from our numerical tests for the examination of the efficiency of the new obtained method. The numerical tests are based on the numerical solution of the Schrodinger equation.

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语言: English

文献类型: Article

作者关键词: Phase-lag; derivative of the phase-lag; initial value problems; oscillating solution; symmetric; multistep; hybrid; Schrodinger equation

KeyWords Plus: INITIAL-VALUE-PROBLEMS; MULTISTEP METHODS; ORBITAL PROBLEMS; INTEGRATION; LAG; SCATTERING

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标题: Evaluation of Shallow Groundwater Contamination and Associated Human Health Risk in an Alluvial Plain Impacted by Agricultural and Industrial Activities, Mid-west China

作者: Wu, JH (Wu, Jianhua); Sun, ZC (Sun, Zhanchao)

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摘要: Intensive human activities have caused contamination to groundwater quality which consequently affects human health. In this study, an evaluation of groundwater quality was carried out for better understanding of the status of groundwater contamination and potential risks to local residents in an alluvial plain (China) where agricultural and industrial activities are intensive. Comprehensive water quality index was used for drinking water-quality assessment and sodium adsorption ratio, Na%, and residual sodium carbonate were applied for irrigation water-quality assessment. The human health risks caused by intake of the contaminated groundwater through the oral and dermal pathways were also assessed. The assessment results reveal that most of the water samples are generally suitable for irrigation purpose, but over 60 % of them are not fit for drinking,

and the total hardness, NO₃ (-), NO₂ (-), TDS, SO₄ (2-), and F⁻ are the main contaminants affecting its suitability for drinking purpose. Residents in the study area are at high health risk, and NO₃ (-) originating mainly from industrial and agricultural pollution is the greatest contributory cause of the health risks. Furthermore, children in this area are at higher health risk than adults, and oral ingestion is the dominant exposure pathway of health risk. Therefore, urgent and efficient measures must be taken to combat groundwater pollution and reduce health risk in the area.

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语言: English

文献类型: Article

作者关键词: Groundwater quality; Water-quality assessment; Human health risk; Human activity; Groundwater pollution

KeyWords Plus: WATER-QUALITY INDEX; NORTHWEST CHINA; DRINKING-WATER; RIVER-BASIN; PENGYANG COUNTY; WEIHE RIVER; POLLUTION; INDIA; AQUIFER; NITRATE

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第 47 条, 共 60 条

标题: Hydrogeochemical Characterization of Groundwater in and Around a Wastewater Irrigated Forest in the Southeastern Edge of the Tengger Desert, Northwest China

作者: Li, PY (Li, Peiyue); Wu, JH (Wu, Jianhua); Qian, H (Qian, Hui); Zhang, YT (Zhang, Yuting); Yang, NA (Yang, Nuan); Jing, LJ (Jing, Lijun); Yu, PY (Yu, Peiyuan)

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摘要: Groundwater is an essential part of water resources for human survival and economic development in arid regions over the world. Human activities and environmental change have imposed significant impacts on groundwater environment. To investigate the hydrogeochemical characteristics and evolution of groundwater in and around a desert region impacted by wastewater irrigation, 84 groundwater samples were collected and analyzed for 18 indices. Statistical and graphical approaches were applied to delineate the general hydrochemical characteristics of groundwater and the major factors influencing its evolution. Stable isotopes of H-2 and O-18 were applied to identify groundwater evaporation process. Hydrogeochemical modeling was also adopted to quantify the major reactions occurring in the groundwater system. The results reveal that the abundance of cations is Na⁺ > Ca²⁺ > Mg²⁺ > K⁺ for groundwater in

the entire study area, while the abundance of anions for groundwater in the desert region is $\text{HCO}_3^- > \text{Cl}^- > \text{SO}_4^{2-}$, and that for groundwater in the alluvial plain is $\text{HCO}_3^- > \text{SO}_4^{2-} > \text{Cl}^-$. Groundwater chemistry in the study area is mainly of rock dominance, and dissolution/precipitation of minerals and cation exchange are major natural factors governing the formation of groundwater chemistry. However, stable isotopes and the occurrence of nitrate show that shallow groundwater evaporation and human activities also have some impacts on groundwater quality. Hydrochemical type transits from Ca-Cl to HCO_3^- center dot SO_4 -Ca type, and then to HCO_3^- center dot SO_4 -Ca center dot Mg type along the flow path. The transition is influenced by multiple factors with water-rock interactions the predominant one. The water-rock interactions for the upper and lower sections of the flow path, indicated by hydrogeochemical modeling, are different due to different geologic and hydrogeologic conditions.

入藏号: WOS:000381997600003

语言: English

文献类型: Article

作者关键词: Groundwater pollution; Water quality; Paper wastewater; Hydrogeochemical modeling; Tengger Desert

KeyWords Plus: SHALLOW GROUNDWATER; HYDROCHEMICAL CHARACTERISTICS; QUALITY ASSESSMENT; YELLOW-RIVER; SOUTHERN PART; COASTAL AREA; PLAIN; MECHANISMS; CHEMISTRY; POLLUTION

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第 48 条, 共 60 条

标题: Appraising Groundwater Quality and Health Risks from Contamination in a Semiarid Region of Northwest China

作者: Li, PY (Li, Peiyue); Li, XY (Li, Xinyan); Meng, XY (Meng, Xiangyi); Li, MN (Li, Mengna); Zhang, YT (Zhang, Yuting)

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摘要: This study assessed groundwater quality in a semiarid region of northwest China impacted by industrial and agricultural activities. The goal was to assess the quality of the water for drinking and irrigation, and the groundwater's effect on human health. Thirty-one groundwater samples were collected from monitoring and hand pumping wells. These wells were distributed

over 54 km²), with an average of 5.7 wells per 10 square kilometers. The samples were analyzed for pH, total dissolved solids (TDS), total hardness (TH), fluoride (F⁻), nitrate (NO₃-N), nitrite (NO₂-N), ammonia nitrogen (NH₄-N), major ions (Na⁺, K⁺, Ca²⁺, Mg²⁺, HCO₃⁻ (2-), SO₄²⁻ (2-), Cl⁻), and heavy metals (Cu, Mn, Zn, As and Cr⁶⁺). Groundwater chemistry was described using statistical analysis, and Piper and Gibbs diagrams. An entropy-based matter element extension analysis was performed to quantify the overall groundwater quality. The sodium adsorption ratio, residual sodium carbonate, and soluble sodium percentage were used to assess irrigation water quality. Considering resident age, sex, and exposure pathways, the non-carcinogenic and carcinogenic health risks were estimated using the models recommended by the Ministry of Environmental Protection of China. Study area groundwater was found to be slightly alkaline. For cations, Na⁺ was most abundant followed by Ca²⁺, then Mg²⁺, and then K⁺. For anions, HCO₃⁻ were more abundant than SO₄²⁻ and Cl⁻. Gibbs diagrams indicate that groundwater evaporation influences the development of sulfate-type groundwater, compared to the other groundwater types (bicarbonate and non-dominant types). The groundwater in most parts of the study area is of fair quality, and is marginally acceptable for multiple uses. TDS, TH, NH₄-N, NO₃-N, and Mn are common contaminants in the alluvial plain. These contaminants originate mainly from industrial and agricultural activities, as well as natural processes. Land irrigated with the groundwater is not exposed to a sodium hazard. However, measures are needed to manage the salinity hazard. The health risk assessment suggests that females and children face higher non-carcinogenic risk than males. The contribution of the contaminants to non-carcinogenic risk is in the following order: NO₃⁻ > F⁻ > As > Mn > NO₂⁻ > Cr > NH₄⁺ > Cu > Zn. Cr contributes more than As to the carcinogenic risk.

入藏号: WOS:000381997600005

语言: English

文献类型: Article

作者关键词: Groundwater pollution; Water quality assessment; Health risk; Entropy weight; Matter element analysis; Human activity

KeyWords Plus: SET PAIR ANALYSIS; MATTER-ELEMENT MODEL; SHALLOW GROUNDWATER; EXTENSION THEORY; DRINKING-WATER; RIVER; FLUORIDE; AREA; SUITABILITY; POLLUTION

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标题: Global asymptotic stability of CNNs with impulses and multi-proportional delays

作者: Song, XL (Song Xueli); Zhao, P (Zhao Pan); Xing, ZW (Xing Zhiwei); Peng, JG (Peng Jigen)

来源出版物: MATHEMATICAL METHODS IN THE APPLIED SCIENCES 卷: 39 期: 4

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摘要: This paper is devoted to global asymptotic stability of cellular neural networks with impulses and multi-proportional delays. First, by means of the transformation $v(i)(t) = u(i)(e(t))$, the impulsive cellular neural networks with proportional delays are transformed into impulsive cellular neural networks with the variable coefficients and constant delays. Second, we prove the global exponential stability of the latter by nonlinear measure, and that the exponential stability of the latter implies the asymptotic stability of the former. We furthermore provide a sufficient condition to the existence, uniqueness, and the global asymptotic stability of the equilibrium point of the former. Our results are generalizations of some existing ones. Finally, an example and its simulation are presented to illustrate effectiveness of our method. Copyright (c) 2015 John Wiley & Sons, Ltd.

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语言: English

文献类型: Article

作者关键词: global asymptotic stability; cellular neural networks; proportional delays; nonlinear measure

KeyWords Plus: CELLULAR NEURAL-NETWORKS; EXPONENTIAL STABILITY

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第 50 条, 共 60 条

标题: FOUR STAGES SYMMETRIC TWO-STEP P-STABLE METHOD WITH VANISHED PHASE-LAG AND ITS FIRST, SECOND, THIRD AND FOURTH DERIVATIVES

作者: Hui, F (Hui, Fei); Simos, TE (Simos, Theodore E.)

来源出版物: APPLIED AND COMPUTATIONAL MATHEMATICS 卷: 15 期: 2 页: 220-238 出版年: 2016

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使用次数 (2013 年至今): 8

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摘要: In this paper we develop a new four-stages symmetric two-step P-Stable tenth algebraic order method with vanished phase-lag and its first, second, third and fourth derivatives. For this new two-step method we will investigate the following: the construction of the new family of methods,

the local truncation error (LTE) of the new developed method and the error analysis, the stability (interval of periodicity) of the new obtained method using a scalar test equation with frequency different than the frequency of the scalar test equation used for phase-lag analysis (stability analysis), the effectiveness of the new method with application on the coupled differential equations arising from the Schrodinger equation.

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语言: English

文献类型: Article

作者关键词: Error Analysis; Stability Analysis; Coupled Differential Equations; Schrodinger equation

KeyWords Plus: INITIAL-VALUE-PROBLEMS; SCHRODINGER-EQUATION; NUMERICAL-SOLUTION; MULTISTEP METHODS; 4-STEP METHODS; HIGH-ORDER; INTEGRATION; SCATTERING

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第 51 条, 共 60 条

标题: Hydrochemical appraisal of groundwater quality for drinking and irrigation purposes and the major influencing factors: a case study in and around Hua County, China

作者: Li, PY (Li, Peiyue); Wu, JH (Wu, Jianhua); Qian, H (Qian, Hui)

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摘要: Groundwater is the major source of water for drinking and irrigation purposes in and around Hua County, China. However, long-term industrial effluents in the upstream of the area have produced contamination to groundwater. To provide a clear and better understanding of the status and extent of groundwater pollution to local decision makers, groundwater quality was assessed for drinking and irrigation purposes in this study using sodium adsorption ratio (SAR), residual sodium carbonate (RSC), soluble sodium percentage (%Na), permeability index (PI), an entropy

weighted water quality index (EWQI), and some graphical approaches such as Wilcox and US Salinity Laboratory (USSL) diagrams. Factors that have significant influences on the hydrochemistry and quality of groundwater were also discussed in detail. Finally, some measures for the protection and management of groundwater in the study area were provided to local decision makers. The results show that shallow groundwater in and around the Hua County is mainly slightly alkaline freshwater with the majority of the samples falling in the category of HCO₃-Ca and mixed HCO₃ center dot SO₄-Ca center dot Mg. Medium quality water is prevalent in the study area for drinking purpose, and the main contaminants in groundwater are total dissolved solid (TDS), total hardness (TH), SO₄²⁻, Cl⁻, NO₃⁻, NO₂⁻, and oil. Groundwater in the study area is suitable for agricultural irrigation with regard to sodium hazard, but mixing of low and high salinity water is recommended before irrigation to reduce the salinity hazard in local areas. Natural processes such as weathering of parent rocks, cation exchange, and groundwater evaporation are the dominant factors influencing groundwater chemistry in the study area. However, river water leakage and human interference are becoming increasingly important in altering natural groundwater chemistry. The recommendations suggest in this study may help to prevent further groundwater pollution in the study area, and the results and recommendations reported here will also be useful for many other regions facing similar problems.

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语言: English

文献类型: Article

作者关键词: Groundwater; Groundwater quality assessment; Hydrochemistry; Influencing factors; Human activity; Groundwater pollution

KeyWords Plus: SHALLOW GROUNDWATER; ALLUVIAL AQUIFER; PENGYANG COUNTY; HEALTH-RISK; FLUORIDE; PLAIN; HYDROGEOCHEMISTRY; SUITABILITY; INDEX; BASIN

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第 52 条, 共 60 条

标题: Investigation Progresses and Applications of Fractional Derivative Model in Geotechnical Engineering

作者: Lai, JX (Lai, Jinxing); Mao, S (Mao, Sheng); Qiu, JL (Qiu, Junling); Fan, HB (Fan, Haobo); Zhang, Q (Zhang, Qian); Hu, ZN (Hu, Zhinan); Chen, JX (Chen, Jianxun)

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摘要: Over the past couple of decades, as a new mathematical tool for addressing a number of tough problems, fractional calculus has been gaining a continually increasing interest in diverse scientific fields, including geotechnical engineering due primarily to geotechnical rheology phenomenon. Unlike the classical constitutive models in which simulation analysis gradually fails to meet the reasonable accuracy of requirement, the fractional derivative models have shown the merits of hereditary phenomena with long memory. Additionally, it is traced that the fractional derivative model is one of the most effective and accurate approaches to describe the rheology phenomenon. In relation to this, an overview aimed first at model structure and parameter determination in combination with application cases based on fractional calculus was provided. Furthermore, this review paper shed light on the practical application aspects of deformation analysis of circular tunnel, rheological settlement of subgrade, and relevant loess researches subjected to the achievements acquired in geotechnical engineering. Finally, concluding remarks and important future investigation directions were pointed out.

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语言: English

文献类型: Review

KeyWords Plus: CREEP CONSTITUTIVE MODEL; CALCULUS; ROCK; PARAMETERS; ASPHALT; SOIL

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第 53 条, 共 60 条

标题: Vibration Response Characteristics of the Cross Tunnel Structure

作者: Lai, JX (Lai, Jinxing); Wang, KY (Wang, Kaiyun); Qiu, JL (Qiu, Junling); Niu, FY (Niu, Fangyuan); Wang, JB (Wang, Junbao); Chen, JX (Chen, Jianxun)

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摘要: It is well known that the tunnel structure will lose its function under the long-term repeated function of the vibration effect. A prime example is the Xi'an cross tunnel structure (CTS) of Metro Line 2 and the Yongningmen tunnel, where the vibration response of the tunnel vehicle load and metro train load to the structure of shield tunnel was analyzed by applying the

three-dimensional (3D) dynamic finite element model. The effect of the train running was simulated by applying the time-history curves of vibration force of the track induced by wheel axles, using the fitted formulas for vehicle and train vibration load. The characteristics and the spreading rules of vibration response of metro tunnel structure were researched from the perspectives of acceleration, velocity, displacement, and stress. It was found that vehicle load only affects the metro tunnel within 14 m from the centre, and the influence decreases gradually from vault to spandrel, haunch, and springing. The high-speed driving effect of the train can be divided into the close period, the rising period, the stable period, the declining period, and the leaving period. The stress at haunch should be carefully considered. The research results presented for this case study provide theoretical support for the safety of vibration response of Metro Line 2 structure.

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语言: English

文献类型: Article

KeyWords Plus: DESIGN; DAMAGE

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第 54 条, 共 60 条

标题: Building a new and sustainable "Silk Road economic belt"

作者: Li, PY (Li, Peiyue); Qian, H (Qian, Hui); Howard, KWF (Howard, Ken W. F.); Wu, JH (Wu, Jianhua)

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摘要: The building of the Silk Road economic belt is an exciting prospect that may bring immense economic benefits to Eurasian countries. However, intensive human activities to be induced by it may double the water crisis in central Asia, deteriorate the vulnerable environment, and accelerate energy consumption in this area. To build a new and sustainable Silk Road economic belt, advancing scientific research, reinforcing international collaboration and enhancing education are necessary steps. With careful planning, sound research, good data and the support from governments and the people, the Silk Road economic belt can be developed in an environmentally sustainable manner that is a credit to all involved.

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语言: English

文献类型: Article

作者关键词: Silk Road; Water resources; Environmental protection; Energy saving; Human activity

KeyWords Plus: CHINA

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ESI 高被引论文: Y

ESI 热点论文: N

第 55 条, 共 60 条

标题: Uranium and molybdenum isotope evidence for an episode of widespread ocean oxygenation during the late Ediacaran Period

作者: Kendall, B (Kendall, Brian); Komiya, T (Komiya, Tsuyoshi); Lyons, TW (Lyons, Timothy W.); Bates, SM (Bates, Steve M.); Gordon, GW (Gordon, Gwyneth W.); Romaniello, SJ (Romaniello, Stephen J.); Jiang, GQ (Jiang, Ganqing); Creaser, RA (Creaser, Robert A.); Xiao, SH (Xiao, Shuhai); McFadden, K (McFadden, Kathleen); Sawaki, Y (Sawaki, Yusuke); Tahata, M (Tahata, Miyuki); Shu, DG (Shu, Degan); Han, J (Han, Jian); Li, Y (Li, Yong); Chu, XL (Chu, Xuelei); Anbar, AD (Anbar, Ariel D.)

来源出版物: GEOCHIMICA ET COSMOCHIMICA ACTA 卷: 156 页: 173-193 DOI: 10.1016/j.gca.2015.02.025 出版年: MAY 1 2015

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使用次数 (最近 180 天): 14

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摘要: To improve estimates of the extent of ocean oxygenation during the late Ediacaran Period, we measured the U and Mo isotope compositions of euxinic (anoxic and sulfidic) organic-rich mudrocks (ORM) of Member IV, upper Doushantuo Formation, South China. The average delta U-238 of most samples is 0.24 +/- 0.16 parts per thousand (2SD; relative to standard CRM145), which is slightly higher than the average delta U-238 of 0.02 +/- 0.12 parts per thousand for restricted Black Sea (deep-water Unit I) euxinic sediments and is similar to a modeled delta U-238 value of 0.2 parts per thousand for open ocean euxinic sediments in the modern well-oxygenated oceans. Because U-238 is preferentially removed to euxinic sediments compared to U-235, expanded ocean anoxia will deplete seawater of U-238 relative to U-235, ultimately leading to deposition of ORM with low delta U-238. Hence, the high delta U-238 of Member IV ORM points to a common occurrence of extensive ocean oxygenation ca. 560 to 551 Myr ago.

The Mo isotope composition of sediments deposited from strongly euxinic bottom waters ([H₂S](aq) > 11 mu M) either directly records the global seawater Mo isotope composition (if Mo removal from deep waters is quantitative) or represents a minimum value for seawater (if Mo removal is not quantitative). Near the top of Member IV, delta Mo-98 approaches the modern

seawater value of 2.34 +/- 0.10 parts per thousand. High delta Mo-98 points to widespread ocean oxygenation because the preferential removal of isotopically light Mo to sediments occurs to a greater extent in O₂-rich compared to O₂-deficient marine environments. However, the delta Mo-98 value for most Member IV ORM is near 0 parts per thousand (relative to standard NIST SRM 3134 = 0.25 parts per thousand), suggesting extensive anoxia. The low delta Mo-98 is at odds with the high Mo concentrations of Member IV ORM, which suggest a large seawater Mo inventory in well-oxygenated oceans, and the high delta U-238. Hence, we propose that the low delta Mo-98 of most Member IV ORM was fractionated from contemporaneous seawater. Possible mechanisms driving this isotope fractionation include: (1) inadequate dissolved sulfide for quantitative thiomolybdate formation and capture of a seawater-like delta Mo-98 signature in sediments or (2) delivery of isotopically light Mo to sediments via a particulate Fe-Mn oxyhydroxide shuttle.

A compilation of Mo isotope data from euxinic ORM suggests that there were transient episodes of extensive ocean oxygenation that break up intervals of less oxygenated oceans during late Neoproterozoic and early Paleozoic time. Hence, Member IV does not capture irreversible deep ocean oxygenation. Instead, complex ocean redox variations likely marked the transition from O₂-deficient Proterozoic oceans to widely oxygenated later Phanerozoic oceans. (C) 2015 Elsevier Ltd. All rights reserved.

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KeyWords Plus: SOUTH CHINA; YANGTZE PLATFORM; BLACK SHALES; FERRUGINOUS CONDITIONS; DOUSHANTUO FORMATION; PALEOREDOX PROXIES; FOSSILIZED NUCLEI; EUXINIC SEDIMENTS; MARINE SEDIMENT; ANIMAL EMBRYOS

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第 56 条, 共 60 条

标题: Microwave synthesis of a novel magnetic imprinted TiO₂ photocatalyst with excellent transparency for selective photodegradation of enrofloxacin hydrochloride residues solution

作者: Lu, ZY (Lu, Ziyang); Chen, F (Chen, Fei); He, M (He, Ming); Song, MS (Song, Minshan); Ma, ZF (Ma, Zhongfei); Shi, WD (Shi, Weidong); Yan, YS (Yan, Yongsheng); Lan, JZ (Lan, Jinze); Li, F (Li, Fang); Xiao, P (Xiao, Peng)

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摘要: Magnetic imprinted TiO₂ photocatalyst (MITP) with excellent transparency was prepared via a microwave heating method based on enrofloxacin hydrochloride (ENRH) as the template molecule, methyl methacrylate (MMA) as the functional monomer, and TiO₂@SiO₂@Fe₃O₄ (TSF) as the matrix material. TSF was synthesized by a mild sol-gel method. The results indicated that MITP possessed hierarchical spherical structure, good monodispersity, superior magnetic properties ($M_s = 11.59 \text{ emu/g}$), the average diameter was approximately 410 nm, and the surface-imprinted layer was composed of the imprinted polymer and poly (methyl methacrylate). Moreover, MITP was proved to exhibit an excellent photochemical stability and a higher photocatalytic efficiency than other photocatalysts, the apparent rate constant (k) for degradation of ENRH with MITP in 90 min under the visible light irradiation was 1.08 min^{-1} . The coefficient of selectivity ($k(\text{selectivity})$) of MITP relative to TSF and magnetic non-imprinted TiO₂ photocatalyst (MNITP) was 2.14 and 2.08, respectively, indicating that MITP also possessed the strong ability to selective recognition and photodegradation of ENRH in the binary antibiotic residues solution containing ENRH and tetracycline (TC). In addition, the mechanism and intermediate products of selective photodegradation of the binary antibiotic residues solution with MITP were further discussed. (C) 2014 Elsevier B.V. All rights reserved.

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作者关键词: Enrofloxacin hydrochloride; Magnetic imprinted photocatalyst; Microwave heating method; Poly (methyl methacrylate); Selective photodegradation; Surface imprinting technology

KeyWords Plus: TITANIUM-DIOXIDE; WASTE-WATER; REMOVAL; DEGRADATION; MICROSPHERES; ANTIBIOTICS; PERFORMANCE; POLYMER; FLUOROQUINOLONES; NANOPARTICLES

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ESI 热点论文: N

第 57 条, 共 60 条

标题: Microwave-assisted in situ synthesis of reduced graphene oxide-BiVO₄ composite photocatalysts and their enhanced photocatalytic performance for the degradation of ciprofloxacin

作者: Yan, Y (Yan, Yan); Sun, SF (Sun, Shaofang); Song, Y (Song, Yang); Yan, X (Yan, Xu); Guan, WS (Guan, Weisheng); Liu, XL (Liu, Xinlin); Shi, WD (Shi, Weidong)

来源出版物: JOURNAL OF HAZARDOUS MATERIALS 卷: 250 页: 106-114 DOI: 10.1016/j.jhazmat.2013.01.051 出版年: APR 15 2013

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摘要: To improve the photodegradation efficiency for ciprofloxacin (CIP), a new-type microwave-assisted in situ growth method is developed for the preparation of reduced graphene oxide (RGO) -BiVO₄ composite photocatalysts. The as-produced RGO-BiVO₄ composite photocatalysts show extremely high enhancement of CIP degradation ratio over the pure BiVO₄ photocatalyst under visible light. Specially, the 2 wt% RGO-BiVO₄ composite photocatalyst exhibits the highest CIP degradation ratio (68.2%) in 60 min, which is over 3 times than that (22.7%) of the pure BiVO₄ particles. The enhancement of photocatalytic activities of RGO-BiVO₄ photocatalysts can be attributed to the effective separation of electron-hole pairs rather than the improvement of light absorption. (C) 2013 Elsevier B.V. All rights reserved.

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PubMed ID: 23434486

语言: English

文献类型: Article

作者关键词: Microwave-assisted method; Photocatalyst; BiVO₄; Reduced graphene oxide; Ciprofloxacin

KeyWords Plus: VISIBLE-LIGHT IRRADIATION; MONOCLINIC BISMUTH VANADATE; EXFOLIATED GRAPHITE OXIDE; NANO-SIZED BIVO₄; PHOTOELECTROCHEMICAL DECOMPOSITION; SEMICONDUCTOR COLLOIDS; HYDROGEN-PRODUCTION; FILM ELECTRODES; WATER OXIDATION; NANOSHEETS

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ESI 热点论文: N

第 58 条, 共 60 条

标题: Experimental studies on the combustion characteristics and performance of a direct injection engine fueled with biodiesel/diesel blends

作者: Qi, DH (Qi, D. H.); Chen, H (Chen, H.); Geng, LM (Geng, L. M.); Bian, YZ (Bian, Y. Zh.)

来源出版物: ENERGY CONVERSION AND MANAGEMENT 卷: 51 期: 12 页: 2985-2992 DOI: 10.1016/j.enconman.2010.06.042 出版年: DEC 2010

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使用次数 (2013 年至今): 41

引用的参考文献数: 30

摘要: Biodiesel is an alternative diesel fuel that can be produced from different kinds of vegetable oils. It is an oxygenated, non-toxic, sulphur-free, biodegradable, and renewable fuel and can be used in diesel engines without significant modification. However, the performance, emissions and combustion characteristics will be different for the same biodiesel used in different types of engine.

In this study, the biodiesel produced from soybean crude oil was prepared by a method of alkaline-catalyzed transesterification. The effects of biodiesel addition to diesel fuel on the performance, emissions and combustion characteristics of a naturally aspirated DI compression ignition engine were examined. Biodiesel has different properties from diesel fuel. A minor increase in brake specific fuel consumption (BSFC) and decrease in brake thermal efficiency (BTE) for biodiesel and its blends were observed compared with diesel fuel. The significant improvement in reduction of carbon monoxide (CO) and smoke were found for biodiesel and its blends at high engine loads. Hydrocarbon (HC) had no evident variation for all tested fuels. Nitrogen oxides (NO(x)) were slightly higher for biodiesel and its blends. Biodiesel and its blends exhibited similar combustion stages to diesel fuel. The use of transesterified soybean crude oil can be partially substituted for the diesel fuel at most operating conditions in terms of the performance parameters and emissions without any engine modification. (C) 2010 Elsevier Ltd. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Biodiesel; Soybean crude oil; Combustion characteristics; Exhaust emissions; Performance

KeyWords Plus: DIESEL-ENGINE; METHYL-ESTER; COOKING OIL; EMISSIONS; SUNFLOWER; JATROPHA; KARANJA

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ESI 高被引论文: Y

ESI 热点论文: N

第 59 条, 共 60 条

标题: Performance and combustion characteristics of biodiesel-diesel-methanol blend fuelled engine

作者: Qi, DH (Qi, D. H.); Chen, H (Chen, H.); Geng, LM (Geng, L. M.); Bian, YZ (Bian, Y. Zh); Ren, XC (Ren, X. Ch)

来源出版物: APPLIED ENERGY 卷: 87 期: 5 页: 1679-1686 DOI: 10.1016/j.apenergy.2009.10.016 出版年: MAY 2010

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使用次数 (最近 180 天): 0

使用次数 (2013 年至今): 32

引用的参考文献数: 21

摘要: An experimental investigation was conducted to evaluate the effects of using methanol as additive to biodiesel-diesel blends on the engine performance, emissions and combustion characteristics of a direct injection diesel engine under variable operating conditions. BD50 (50% biodiesel and 50% diesel in vol.) was prepared as the baseline fuel. Methanol was added to BD50 as an additive by volume percent of 5% and 10% (denoted as BDM5 and BDM10). The results indicate that the combustion starts later for BDM5 and BDM10 than for BD50 at low engine load, but is almost identical at high engine load. At low engine load of 1500 r/min, BDM5 and BDM10 show the similar peak cylinder pressure and peak of pressure rise rate to BD50, and higher peak of heat release rate than that of BD50. At low engine load of 1800 r/min, the peak cylinder pressure and the peak of pressure rise rate of BDM5 and BDM10 are lower than those of BD50, and the peak of heat release rate is similar to that of BD50. The crank angles at which the peak values occur are later for BDM5 and BDM10 than for BD50. At high engine load, the peak cylinder pressure, the peak of pressure rise rate and peak of heat release rate of BDM5 and BDM10 are higher than those of BD50, and the crank angle of peak values for all tested fuels are almost same. The power and torque outputs of BDM5 and BDM10 are slightly lower than those of BD50. BDM5 and BDM10 show dramatic reduction of smoke emissions. CO emissions are slightly lower, and NO_x and HC emissions are almost similar to those of BD50 at speed characteristic of full engine load. (C) 2009 Elsevier Ltd. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Biodiesel; Methanol; Combustion characteristics; Emissions; Performance

KeyWords Plus: COMPRESSION IGNITION ENGINE; ETHANOL BLEND; EMISSIONS; OIL; REDUCTION; BIOFUELS; TALLOW

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第 60 条, 共 60 条

标题: Combustion and performance evaluation of a diesel engine fueled with biodiesel produced from soybean crude oil

作者: Qi, DH (Qi, D. H.); Geng, LM (Geng, L. M.); Chen, H (Chen, H.); Bian, YZ (Bian, Y. Zh.); Liu, J (Liu, J.); Ren, XC (Ren, X. Ch.)

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引用的参考文献数: 14

摘要: In this study, the biodiesel produced from soybean crude oil was prepared by a method of alkaline-catalyzed transesterification. The important properties of biodiesel were compared with those of diesel. Diesel and biodiesel were used as fuels in the compression ignition engine, and its performance, emissions and combustion characteristics of the engine were analyzed. The results showed that biodiesel exhibited the similar combustion stages to that of diesel, however, biodiesel showed an earlier start of combustion. At lower engine loads, the peak cylinder pressure, the peak rate of pressure rise and the peak of heat release rate during premixed combustion phase were higher for biodiesel than for diesel. At the peak cylinder pressure of biodiesel was almost similar to that of diesel, but the her engine loads, the peak rate of pressure rise and the peak of heat release rate were lower for biodiesel. The power output of biodiesel was almost identical with that of diesel. The brake specific fuel consumption was higher for biodiesel due to its lower heating value. Biodiesel provided significant reduction in CO, HC, NOx and smoke under speed characteristic at full engine load. Based on this study, biodiesel can be used as a substitute for diesel in diesel engine. (C) 2009 Elsevier Ltd. All rights reserved.

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语言: English

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