

# 长安大学 ESI 月报

(2019 年 3 月)

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长安大学图书馆

2019 年 3 月 14 日，最新一期 ESI 数据更新发表，统计数据覆盖时间范围为 11 年整（2008.1.1-2018.12.31），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 6009 所，比上期（2019 年 1 月）增加 139 所（上期 5870 所），我校 ESI 排名 3103 位（上期 3138 位）。高被引论文 45 篇（见表 1），比上期（2019 年 1 月更新数据为 48 篇）减少 3 篇；热点论文 3 篇（见表 2），与上期相比减少 3 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	163
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	149
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	118
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	97
5	BUILDING A NEW AND SUSTAINABLE SILK ROAD ECONOMIC BELT	000362903400023	LI, PY;QIAN, H;HOWARD, KWF;WU, JH	ENVIRON EARTH SCI 74 (10): 7267-7270 NOV 2015	ENVIRONMENT/ ECOLOGY	91

6	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/ ECOLOGY	87
7	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;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	84
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	83
9	HYDROGEOCHEMICAL CHARACTERIZATION OF GROUNDWATER IN AND AROUND A WASTEWATER IRRIGATED FOREST IN THE	000381997600003	LI, PY;WU, JH;QIAN, H;ZHANG, YT;YANG, NA;JING, LJ;YU, PY	EXPO HEALTH 8 (3): 331-348 SEP 2016	ENVIRONMENT/ ECOLOGY	63

	SOUTHEASTERN EDGE OF THE TENGER DESERT, NORTHWEST CHINA					
10	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/ ECOLOGY	54
11	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	52
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	47
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	45
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	44
15	PROGRESS, OPPORTUNITIES, AND KEY	000401566600006	LI, PY;TIAN, R;XUE,	ENVIRON SCI	ENVIRONMENT/	41

	FIELDS FOR GROUNDWATER QUALITY RESEARCH UNDER THE IMPACTS OF HUMAN ACTIVITIES IN CHINA WITH A SPECIAL FOCUS ON WESTERN CHINA		CY;WU, JH	POLLUT RES 24 (15): 13224-13234 MAY 2017	ECOLOGY	
16	PREDICATION OF NONLINEAR HEAT TRANSFER IN A CONVECTIVE-RADIATIVE FIN WITH TEMPERATURE-DEPENDENT PROPERTIES BY THE COLLOCATION SPECTRAL METHOD	000367347200004	SUN, YS;MA, J;LI, BW;GUO, ZX	NUMER HEAT TRANSFER PT B-FUND 69 (1): 68-83 JAN 2 2016	ENGINEERING	37
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	33
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, LX	NATURAL HAZARDS 89 (3): 1485-1493 DEC 2017	GEOSCIENCES	30
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/ ECOLOGY	27
20	MESOPOROUS MANGANESE OXIDE WITH LARGE SPECIFIC SURFACE AREA FOR HIGH-PERFORMANCE ASYMMETRIC SUPERCAPACITOR WITH ENHANCED CYCLING STABILITY	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	24

21	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	24
22	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	23
23	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	23
24	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	21
25	MOF-DERIVED POROUS N-CO <sub>3</sub> O <sub>4</sub> @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	21
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	21

27	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	19
28	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	15
29	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	15
30	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/ ECOLOGY	15
31	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	13
32	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	13
33	PRINCIPAL STRESS ROTATION UNDER	000431052600013	LI, Y;YANG, YM;YU,	KSCE J CIV ENG	ENGINEERING	12



	BIDIRECTIONAL SIMPLE SHEAR LOADINGS		HS;ROBERTS, G	22 (5): 1651-1660 MAY 2018		
34	IMPROVING CRACKING RESISTANCE OF CEMENT MORTAR BY THERMO-SENSITIVE POLY N-ISOPROPYL ACRYLAMIDE (PNIPAM) GELS	000423648000113	WANG, ZJ;WU, JY;ZHAO, P;DAI, N;ZHAI, ZW;AI, T	J CLEAN PROD 176: 1292-1303 MAR 1 2018	ENGINEERING	12
35	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/ ECOLOGY	11
36	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	10
37	CHALLENGES AND PROSPECTS OF SUSTAINABLE GROUNDWATER MANAGEMENT IN AN AGRICULTURAL PLAIN ALONG THE SILK ROAD ECONOMIC BELT, NORTH-WEST CHINA	000430045800003	CHEN, J;WU, H;QIAN, H;LI, XY	INT J WATER RESOUR DEV 34 (3): 354-368 SP. ISS. SI 2018	ENVIRONMENT/ ECOLOGY	10
38	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	10
39	GEOCHEMISTRY, HYDRAULIC CONNECTIVITY AND QUALITY APPRAISAL	000431882400002	LI, PY;WU, JH;TIAN, R;HE, S;HE, XD;XUE,	MINE WATER ENVIRON 37 (2):	ENVIRONMENT/ ECOLOGY	10

	OF MULTILAYERED GROUNDWATER IN THE HONGDUNZI COAL MINE, NORTHWEST CHINA		CY;ZHANG, K	222-237 SP. ISS. SI JUN 2018		
40	AN ALGORITHM FOR TRAFFIC FLOW PREDICTION BASED ON IMPROVED SARIMA AND GA	000451529600043	LUO, XL;NIU, LY;ZHANG, SR	KSCE J CIV ENG 22 (10): 4107-4115 OCT 2018	ENGINEERING	9
41	INTERNAL STRESS DISTRIBUTION AND CRACKING AROUND FLAWS AND OPENINGS OF ROCK BLOCK UNDER UNIAXIAL COMPRESSION: A PARTICLE MECHANICS APPROACH	000446149800003	FAN, X;LI, KH;LAI, HP;XIE, YL;CAO, RH;ZHENG, J	COMPUT GEOTECH 102: 28-38 OCT 2018	COMPUTER SCIENCE	9
42	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	8
43	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	8
44	LONGITUDINAL DEFORMATION PROFILE OF A TUNNEL IN WEAK ROCK MASS BY USING THE BACK ANALYSIS METHOD	000418212600041	LUO, YB;CHEN, JX;CHEN, Y;DIAO, PS;QIAO, X	TUNN UNDERGR SPACE TECHNOL 71: 478-493 JAN 2018	ENGINEERING	8
45	CONJUNCTIVE USE OF GROUNDWATER AND SURFACE WATER TO REDUCE SOIL	000430045800002	LI, PY;QIAN, H;WU, JH	INT J WATER RESOUR DEV 34	ENVIRONMENT/ ECOLOGY	8

	SALINIZATION IN THE YINCHUAN PLAIN, NORTH-WEST CHINA			(3): 337-353 SP. ISS. SI 2018		
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表 2 长安大学 ESI 热点引论文简况 (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	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	19
2	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	15
3	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/ECOLOGY	15

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45 篇高被引论文的分布院系为：公路学院 15 篇，位居首位，比上期减少 9 篇；环境科学与工程学院 11 篇，比上期增加 1 篇；汽车学院 6 篇；信息工程学院 4 篇；地质工程与测绘学院 4 篇；材料科学与工程学院 3 篇；地球科学与资源学院 1 篇；理学院 1 篇。表 3 显示了我校近两期 ESI 高被引论文院系分布变化情况。

表 3 近两期长安大学 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	10	6	4	3	3	2	1
2019.3	15	11	6	4	4	3	1	1

3 篇热点论文的分布院系为：信息学院 1 篇；地质工程与测绘学院 2 篇。表 4 显示了我校近两期 ESI 热点论文院系分布变化情况。

表 4 近两期长安大学 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	2	2	1	1
2019.3		1		1

## 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, 140 篇，被引用 5, 283 次，其中高被引论文 18 篇。本期全球有 1461 所机构（大陆机构 161 所）的工程学学科进入 ESI 全球排名前 1% 行列，我校位列 863 位。

表 5 我校工程学 ESI 排名情况（近三期数据比较）

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

除了工程学，我校还有其他学科近期表现良好，具有潜力冲刺全球前 1%。下图对 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，对具有潜力进入全球前 1%的学科进行了预测。

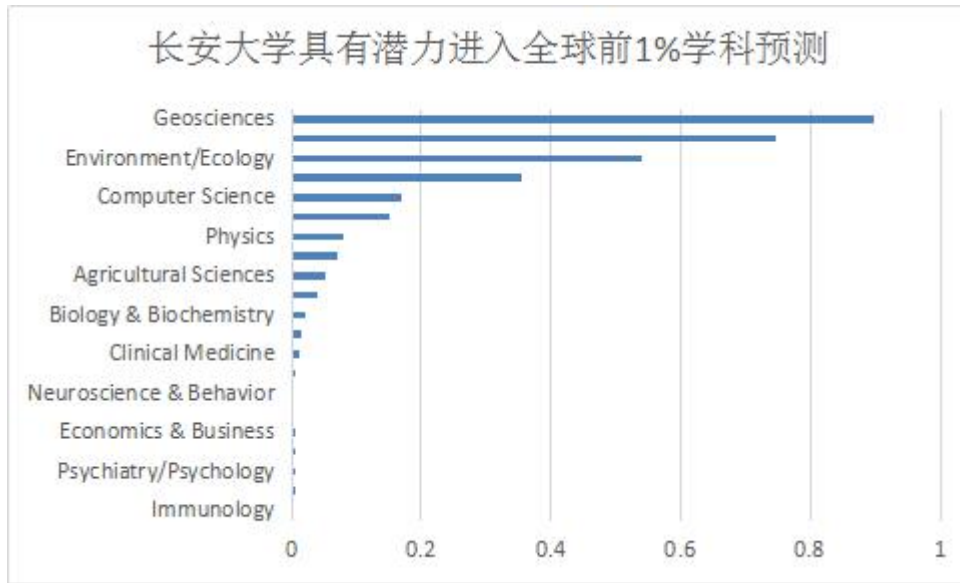


图 1 长安大学具有潜力进入全球前 1%学科预测

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（见图 1）。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。

本期全球有 691 所机构的地球科学进入全球前 1%，中国大陆有 33 所机构的地球科学进入前 1%排位，下表 6 是地球科学目前已经进入全球前 1%的 33 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 7，以便参考。

表 6 地球科学学科进入全球前 1%的大陆 33 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	31905	410762	12.87	404	3
2	中国地质大学	9190	116658	12.69	138	27
3	北京大学	4180	73521	17.59	101	56
4	中国地质科学院	3846	61881	16.09	63	73

5	南京大学	3707	48259	13.02	40	101
6	中国气象局	2703	36403	13.47	41	143
7	北京师范大学	2812	35348	12.57	60	150
8	武汉大学	3217	28083	8.73	49	204
9	清华大学	1785	27881	15.62	61	207
10	西北大学	1116	27471	24.62	37	209
11	中国地震管理局	2770	26873	9.70	16	218
12	兰州大学	1733	25739	14.85	33	227
13	中国海洋大学	2514	24138	9.60	32	243
14	南京信息工程大学	3111	23425	7.53	33	252
15	中国气象科学研究院	1761	23361	13.27	30	254
16	中国气象大学	3768	21373	5.67	56	276
17	中国石油天然气集团公司	2835	17536	6.19	15	333
18	吉林大学	1839	17191	9.35	12	338
19	中国矿业大学	1985	17047	8.59	34	339
20	西安交通大学	790	15909	20.14	20	369
21	同济大学	1612	14595	9.05	12	395
22	中山大学	1545	13557	8.77	19	412
23	国家海洋局	2107	13197	6.26	6	422
24	浙江大学	1363	11927	8.75	12	456
25	中南大学	1222	9545	7.81	21	523
26	华东师范大学	768	9027	11.75	15	540
27	成都理工大学	1177	8820	7.49	7	547
28	中国石化	1514	8455	5.58	7	562
29	中国地质调查局	991	7524	7.59	9	605
30	河海大学	1062	7261	6.84	10	617
31	复旦大学	539	6990	12.97	10	630
32	南京师范大学	480	6978	14.54	16	631
33	厦门大学	695	6763	9.73	10	648

表 7 长安大学地球科学论文情况

	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	746	5608	6244

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 8 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

下表为陕西省内高校进入全球前 1%的学科概况。

表 9 陕西省内高校 ESI 排名

省内排名	高校名称	论文篇数	总被引频次	篇均被引频次	进入前 1%的学科数	进入 ESI 前 1%的学科	全球 ESI 排位
1	西安交通大学	42, 586	418, 474	9. 83	14	工程学	353/6009
						材料科学	
						化学	
						物理学	
						临床医学	
						分子生物学与遗传学	
						地球科学	
						计算机科学	

						生物学与生物化学	
						药理学和毒理学	
						神经系统学与行为学	
						数学	
						经济与商业	
						社会科学总论	
2	第四军医大学	11, 826	158, 349	13.39	6	临床医学	843/6009
						分子生物学与遗传学	
						神经系统学与行为学	
						药理学与毒理学	
						材料科学	
						生物学与生物化学	
3	西北工业大学	20, 300	150, 134	7.40	4	材料科学	879/6009
						工程学	
						化学	
						计算机科学	
4	西北农林科技大学	14, 590	130, 225	8.93	6	农业科学	989/6009
						植物学与动物学	
						化学	
						生物学与生物化学	
						环境科学与生态学	
						工程学	
5	西北大学	8853	103, 815	11.73	4	化学	1160/6009
						地球科学	
						材料科学	
						工程学	
6	西安电子科技大学	14, 612	92, 598	6.34	2	工程学	1255/6009
						计算机科学	
7	陕西师范大学	8, 573	74, 715	8.72	4	材料科学	1447/6009
						化学	
						农业科学	
						工程学	
8	长安大学	4, 197	23, 189	5.53	1	工程学	3103/6009
9	陕西科技大学	2, 936	19, 211	6.54	1	材料科学	3424/6009
10	西安理工大学	3, 883	19, 071	4.91	2	材料科学	3436/6009
						工程学	
11	西安建筑科技大学	2, 837	18, 782	6.62	1	工程学	3458/6009

12	空军工程大学	2,304	9,695	4.21	1	工程学	4510/6009
13	西安医学院	1,440	9,251	6.42	1	临床医学	4578/6009

注：排名按照全球 ESI 排名先后顺序。

#### 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 3 月 14 日更新)

第 1 条, 共 45 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

DOI: 10.1007/s12205-018-0429-4 出版年: OCT 2018

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使用次数 (最近 180 天): 8

使用次数 (2013 年至今): 8

引用的参考文献数: 28

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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出版商地址: 3-16 JUNGDAE-RO 25-GIL, SONGPA-GU, SEOUL, 05661, SOUTH KOREA

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ISO 来源出版物缩写: KSCE J. Civ. Eng.

来源出版物页码计数: 9

ESI 高被引论文: Y

ESI 热点论文: N

第 2 条, 共 45 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)

来源出版物: ENVIRONMENTAL EARTH SCIENCES 卷: 77 期: 19 文献号: 706 DOI: 10.1007/s12665-018-7888-2 出版年: OCT 2018

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引用的参考文献数: 72

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.

入藏号: WOS:000446842900001

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; MOUNTAIN; FAILURE; SHALLOW

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来源出版物页码计数: 14

ESI 高被引论文: Y

ESI 热点论文: N

第 3 条, 共 45 条

标题: Internal stress distribution and cracking around flaws and openings of rock block under uniaxial compression: A particle mechanics approach

作者: Fan, X (Fan, Xiang); Li, KH (Li, Kaihui); Lai, HP (Lai, Hongpeng); Xie, YL (Xie, Yongli); Cao, RH (Cao, Rihong); Zheng, J (Zheng, Jun)

来源出版物: COMPUTERS AND GEOTECHNICS 卷: 102 页: 28-38 DOI: 10.1016/j.compegeo.2018.06.002 出版年: OCT 2018

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使用次数 (2013 年至今): 24

引用的参考文献数: 46

摘要: Based on experimental results, bonded particle models containing flaws or/and openings were created to investigate the peak stress, crack-initiation stress, number of micro-cracks, local stress distribution and cracking behavior under uniaxial compression. It is found that flaws and openings are distinctly related to the peak stress, the crack-initiation stress and the number of micro-cracks. As the flaw inclination angle increases, the distributions of principal stresses surrounding a flaw vary, while those surrounding an opening present a similar shape with magnitude differences. The distribution of local stress well accounts for the cracking behavior.

入藏号: WOS:000446149800003

语言: English

文献类型: Article

作者关键词: Measurement sphere; Bonded particle model; Circular opening; Flaw; Principal stress

KeyWords Plus: EXCAVATION DAMAGED ZONE; BIAXIAL COMPRESSION; FAILURE BEHAVIOR; NONPERSISTENT JOINTS; CYLINDRICAL OPENINGS; FRACTURE EVOLUTION; BRITTLE ROCK; MASS; MODEL; SIMULATION

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来源出版物页码计数: 11

ESI 高被引论文: Y

ESI 热点论文: N

第 4 条, 共 45 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

Web of Science 核心合集中的 "被引频次": 31

被引频次合计: 31

使用次数 (最近 180 天): 84

使用次数 (2013 年至今): 97

引用的参考文献数: 58

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 Fujiayao 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.

入藏号: WOS:000441684700001

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; DEFORMATION; BEHAVIOR; REGION; CHINA; MODEL

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ISO 来源出版物缩写: J. Perform. Constr. Facil.

来源出版物页码计数: 15

ESI 高被引论文: Y

ESI 热点论文: N

第 5 条, 共 45 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

Web of Science 核心合集中的 "被引频次": 23

被引频次合计: 23

使用次数 (最近 180 天): 51

使用次数 (2013 年至今): 84

引用的参考文献数: 119

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; COLLAPSE; TUNNEL; DEFORMATION; LANDSLIDES; DEPOSITS; SOILS; ROCK

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来源出版物页码计数: 27

ESI 高被引论文: Y

ESI 热点论文: N

第 6 条, 共 45 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:

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使用次数 (最近 180 天): 17

使用次数 (2013 年至今): 37

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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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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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ESI 热点论文: N

第 7 条, 共 45 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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摘要: Due to the important roles playing in the vehicles' adaptive cruise control system, variable vehicular gap policies 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 policies 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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ESI 热点论文: N

第 8 条, 共 45 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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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 SO<sub>4</sub> center dot 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<sup>+</sup>, SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup>, F<sup>-</sup>, TH, TDS, NO<sub>3</sub><sup>-</sup>, and CODMn are the major factors responsible for the poor quality of the phreatic water, while Na<sup>+</sup>, SO<sub>4</sub><sup>2-</sup>, F<sup>-</sup>, 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.

入藏号: WOS:000431882400002

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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ESI 热点论文: N

第 9 条, 共 45 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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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: PARTICLE SWARM OPTIMIZATION; ARTIFICIAL NEURAL-NETWORK; INFERENCE SYSTEM ANFIS; DATA MINING TECHNIQUES; LOGISTIC-REGRESSION; SPATIAL PREDICTION; FREQUENCY RATIO; RANDOM FORESTS; FUZZY; MULTIVARIATE

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第 10 条, 共 45 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)

来源出版物: KSCE JOURNAL OF CIVIL ENGINEERING 卷: 22 期: 5 页: 1651-1660

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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 ( $\theta$ ) 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  $\theta$ , 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 11 条, 共 45 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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引用的参考文献数: 91

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.

入藏号: WOS:000430031800015

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 MODEL; SUPPORT VECTOR MACHINES; INFERENCE SYSTEM ANFIS; DATA MINING TECHNIQUES; HOA BINH PROVINCE; SPATIAL PREDICTION; FREQUENCY RATIO; CERTAINTY FACTOR; ENTROPY MODELS; DIFFERENTIAL EVOLUTION

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第 12 条, 共 45 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 m<sup>3</sup>. 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: RING-SHEAR APPARATUS; DEBRIS FLOWS; RAINFALL; CHINA; SUSCEPTIBILITY; AVALANCHES; DYNAMICS; MODEL

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第 13 条, 共 45 条

标题: Improving cracking resistance of cement mortar by thermo-sensitive poly N-isopropyl acrylamide (PNIPAM) gels

作者: Wang, ZJ (Wang, Zhenjun); Wu, JY (Wu, Jiayu); Zhao, P (Zhao, Peng); Dai, N (Dai, Nan); Zhai, ZW (Zhai, Zhiwei); Ai, T (Ai, Tao)

来源出版物: JOURNAL OF CLEANER PRODUCTION 卷: 176 页: 1292-1303 DOI: 10.1016/j.jclepro.2017.11.242 出版年: MAR 1 2018

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使用次数 (2013 年至今): 65

引用的参考文献数: 27

摘要: Cracking problems are threats to durability and sustainability of high performance cement-based composites. Due to the complex behaviors of cement materials under various environmental conditions, accurate prediction of the cracks is very difficult. In this work, effects of novel thermo-sensitive polymer N-isopropylacrylamide (PNIPAM) on the cracking resistance of cement mortar were investigated. The micro structures of cement mortar and PNIPAM were characterized by environmental scanning electron microscopy (ESEM) and Fourier Transform Infrared Spectroscopy (FT-IR). The pulse velocity, water absorption and water content of cement mortar were tested to observe the inner structure changes of cement mortar with PNIPAM. Artificial neural network (ANN) technology was used to predict the cracking resistance of cement mortar with PNIPAM. The results show that PNIPAM is cross-linked macromolecule polymer with special thermo-sensitive characters of shrinkage at high temperature and expansion at low temperature. When the mixing temperature is lower than LCST of PNIPAM; it can expand and is soluble in water. However, PNIPAM can shrink and release water to cure the hardened mortar when temperature is higher than LCST due to the cement hydration heat accumulation. The proposed model built by ANN can be used to predict the cracking resistance of cement mortar. The model was further applied to evaluate the effects of different PNIPAM contents on the cracking performance of cement mortar. PNIPAM with suitable contents can decrease the internal defects of cement mortar. The content of PNIPAM can be used below 1.2% of cement mass for the consideration of cracking resistance improvement of cement mortar. (C) 2017 Elsevier Ltd. All rights reserved.

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语言: English

文献类型: Article

作者关键词: Thermo-sensitive gels; Poly N-Isopropyl acrylamide (PNIPAM); Artificial neural network (ANN); Cement mortar; Cracking resistance

KeyWords Plus: SUPER ABSORBENT POLYMERS; MICROMECHANICAL MODEL; AUTOGENOUS SHRINKAGE; RELATIVE-HUMIDITY; THERMAL-EXPANSION;

NEURAL-NETWORKS; EARLY-AGE; IN-SITU; CONCRETE; COEFFICIENT

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ESI 高被引论文: Y

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第 14 条, 共 45 条

标题: MOF-derived porous N-Co<sub>3</sub>O<sub>4</sub>@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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使用次数 (最近 180 天): 252

使用次数 (2013 年至今): 493

引用的参考文献数: 66

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<sup>-1</sup>. 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-Co<sub>3</sub>O<sub>4</sub>@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 Co<sub>3</sub>O<sub>4</sub> and the carbon framework, simultaneously achieving a well-defined porous structure. After wrapping with reduced graphene oxide (rGO), this porous N-Co<sub>3</sub>O<sub>4</sub>@N-C/rGO cathode supported a high sulfur loading (5.89 mg cm<sup>-2</sup>) and exhibited excellent stability (611 mA h g<sup>-1</sup>) 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-Co<sub>3</sub>O<sub>4</sub>@N-C/rGO nanododecahedra effectively bind LiPSs in the electrode over multiple cycles. This proved that the cobalt oxides in the porous N-Co<sub>3</sub>O<sub>4</sub>@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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文献类型: Article

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

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ESI 高被引论文: Y

ESI 热点论文: N

第 15 条, 共 45 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)

来源出版物: NONLINEAR DYNAMICS 卷: 91 期: 3 页: 1415-1428 DOI: 10.1007/s11071-017-3953-8 出版年: FEB 2018

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引用的参考文献数: 66

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.

入藏号: WOS:000424037200001

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 VEHICLES; NON-LANE-DISCIPLINE; TRAFFIC FLOW; STABILITY ANALYSIS; CONTROL-SYSTEMS; NEIGHBOR INTERACTION; ENERGY-CONSUMPTION; FUEL CONSUMPTION; DRIVER MEMORY; FULL VELOCITY

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第 16 条, 共 45 条

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)

来源出版物: RENEWABLE & SUSTAINABLE ENERGY REVIEWS 卷: 82 页: 3554-3569

DOI: 10.1016/j.rser.2017.10.104 子辑: 3 出版年: FEB 2018

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使用次数 (2013 年至今): 111

引用的参考文献数: 100

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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第 17 条, 共 45 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)

来源出版物: MATHEMATICAL PROBLEMS IN ENGINEERING 文献号: 1329187 DOI: 10.1155/2018/1329187 出版年: 2018

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使用次数 (2013 年至今): 31

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 热点论文: N

第 18 条, 共 45 条

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)

来源出版物: ADVANCES IN CIVIL ENGINEERING 文献号: 9818250 DOI: 10.1155/2018/9818250 出版年: 2018

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使用次数 (最近 180 天): 10

使用次数 (2013 年至今): 30

引用的参考文献数: 50

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.

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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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第 19 条, 共 45 条

标题: Conjunctive use of groundwater and surface water to reduce soil salinization in the Yinchuan Plain, North-West China

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

来源出版物: INTERNATIONAL JOURNAL OF WATER RESOURCES DEVELOPMENT 卷: 34 期: 3 特刊: SI 页: 337-353 DOI: 10.1080/07900627.2018.1443059 出版年: 2018

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使用次数 (2013 年至今): 80

引用的参考文献数: 29

摘要: Poor water resource management is an important factor in soil salinization in arid areas. In this study, the status of soil salinization and its controlling factors are summarized for the Yinchuan Plain, North-West China. The conjunctive use of surface water diverted from the Yellow River and groundwater abstracted from a shallow aquifer is proposed to alleviate soil salinization in the plain. Scenarios are designed and simulated to determine the optimal proportions at which groundwater should be exploited for irrigation in the three cities of the plain. Policies and suggestions regarding sustainable water resources and soil salinization research in the plain are recommended.

入藏号: WOS:000430045800002

语言: English

文献类型: Article

作者关键词: Groundwater development; Conjunctive use of water; Groundwater modelling; Salinization; Agricultural development; China

KeyWords Plus: QUALITY RESEARCH; CLIMATE; OPPORTUNITIES; SALINITY; THREAT

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ESI 热点论文: N

第 20 条, 共 45 条

标题: Challenges and prospects of sustainable groundwater management in an agricultural plain along the Silk Road Economic Belt, north-west China

作者: Chen, J (Chen, Jie); Wu, H (Wu, Hao); Qian, H (Qian, Hui); Li, XY (Li, Xinyan)

来源出版物: INTERNATIONAL JOURNAL OF WATER RESOURCES DEVELOPMENT 卷:

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摘要: As a major challenge in building a new and sustainable Silk Road Economic Belt, threats induced by poor groundwater management have raised stress on the groundwater resources in the Yinchuan Plain, north-west China. In the present article, an overview of groundwater development in the plain, along with the associated negative effects, is provided. A fragmented management framework is found responsible for the poor groundwater management. Efficient and effective groundwater management will require proper attention of the local authorities to the inherent interaction among various water systems. Only with enhanced cooperation, an integrated monitoring network, strengthened scientific support and active public participation can the sustainability of groundwater management of the plain be achieved.

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语言: English

文献类型: Article

作者关键词: Groundwater; deterioration; sustainability; Yinchuan Plain; arid area; Silk Road

KeyWords Plus: SOIL SALINIZATION; YINCHUAN PLAIN; HEALTH-RISK; AREA; AQUIFER; QUALITY; NINGXIA

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第 21 条, 共 45 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

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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; CASE-HISTORY; FIELD TRIAL; SHANGHAI; INSTALLATION; TUNNELS; TECHNOLOGY; EXCAVATION

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ESI 热点论文: N

第 22 条, 共 45 条

标题: Longitudinal deformation profile of a tunnel in weak rock mass by using the back analysis method

作者: Luo, YB (Luo, Yanbin); Chen, JX (Chen, Jianxun); Chen, Y (Chen, Yi); Diao, PS (Diao, Pengsheng); Qiao, X (Qiao, Xiong)

来源出版物: TUNNELLING AND UNDERGROUND SPACE TECHNOLOGY 卷: 71 页: 478-493 DOI: 10.1016/j.tust.2017.10.003 出版年: JAN 2018

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使用次数 (最近 180 天): 22

使用次数 (2013 年至今): 53

引用的参考文献数: 48

摘要: Analysis, of the rock mass deformation behavior is a very important aspect of the safety assessment for tunnel construction in weak rock mass. In this paper, the deformation characteristics of a soft rock mass tunnel using three beaches construction method were investigated, which include the crown settlement and horizontal displacement and have 9 sections with 3 different construction schemes. The optimized construction schemes by decreasing the beaches length and changing the geologist of primary support were proposed. Then, applying the displacement back analysis method to calculate the rock mass parameters, double parameters were analyzed by using the golden section method. Results show that the tunnel deformations were affected by the elastic modulus  $E$  and the lateral pressure coefficient  $\lambda$  of rock mass, and the change of  $E$  has greater influence than  $\lambda$ . on the tunnel deformation. The change of  $\lambda$  has greater influence on the crown settlement than that on the horizontal displacement. Furthermore, the regularity and characteristics of longitudinal deformation profile (LDP) in a weak rock mass tunnel was studied by utilizing the Fast Lagrangian Analysis of Continua (FLAC), and the LDP of the three long-beach construction scheme and the three short-beach construction scheme were compared. The results show that the complete displacements of tunnel under the three short-beach construction scheme condition by decreasing the lengths of the middle and lower benches are smaller than that under the three short beach construction scheme condition, however the pre-deformation of the tunnel deformation under this two construction scheme conditions is nearly the same. The extrusion deformation at the tunnel face of the three short-beach construction scheme is larger than that of the three long-beach construction scheme. Therefore, increasing the area of the core soil is a feasible measure to control the extrusion deformation on the tunnel face. Finally, the tunnel optimized construction scheme was verified benefit the tunnel stability. The measures of decreasing the length of middle and lower bench and closing the invert early and immediately will benefit the tunnel stability.

入藏号: WOS:000418212600041

语言: English

文献类型: Article

作者关键词: Weak rock mass tunnel; Longitudinal deformation profile (LDP); Complete deformation; Displacement back analysis; Numerical simulation

KeyWords Plus: PARAMETER-ESTIMATION; IDENTIFICATION; OPTIMIZATION; DESIGN; MODEL; CONSTRUCTION

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ESI 热点论文: N

第 23 条, 共 45 条

标题: The catastrophic landside 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): 26

使用次数 (2013 年至今): 100

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 m<sup>3</sup>. 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.

入藏号: WOS:000415325500026

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 24 条, 共 45 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)

来源出版物: CHEMICAL ENGINEERING JOURNAL 卷: 324 页: 35-43 DOI: 10.1016/j.cej.2017.05.014 出版年: SEP 15 2017

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使用次数 (最近 180 天): 50

使用次数 (2013 年至今): 163

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 185Wkg (1) and still remains 21 Wh kg (1) at a power density of 1630Wkg (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: ELECTROCHEMICAL ENERGY-STORAGE; NEUTRAL AQUEOUS-ELECTROLYTES; ACTIVATED CARBON; CAPACITORS; MNO2; ELECTRODES; DIOXIDE; PROGRESS; FILM; CONVERSION

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ESI 热点论文: N

第 25 条, 共 45 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)

来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH 卷: 24 期: 15

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Web of Science 核心合集中的 "被引频次": 50

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使用次数 (最近 180 天): 29

使用次数 (2013 年至今): 125

引用的参考文献数: 72

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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PubMed ID: 28281079

语言: English

文献类型: Article

作者关键词: Groundwater pollution; Groundwater quality; Health risk; Hydrochemistry; Water quality assessment; Western China

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

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第 26 条, 共 45 条

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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使用次数 (2013 年至今): 10

引用的参考文献数: 93

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.

入藏号: WOS:000418899200046

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; FUZZY-LOGIC; EVENTS APPLICATION;

NEURAL-NETWORKS; RANDOM FOREST; PROCESS AHP; TURKEY

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第 27 条, 共 45 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.)

来源出版物: FILOMAT 卷: 31 期: 15 页: 4999-5012 DOI: 10.2298/FIL1715999D 出版年: 2017

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引用的参考文献数: 61

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 28 条, 共 45 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)

来源出版物: ENVIRONMENTAL EARTH SCIENCES 卷: 76 期: 2 文献号: UNSP 94

DOI: 10.1007/s12665-017-6405-3 出版年: JAN 2017

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引用的参考文献数: 61

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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语言: English

文献类型: Article

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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ESI 高被引论文: Y

ESI 热点论文: N

第 29 条, 共 45 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)

来源出版物: IEEE TRANSACTIONS ON MULTIMEDIA 卷: 19 期: 1 页: 15-26 DOI: 10.1109/TMM.2016.2599145 出版年: JAN 2017

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引用的参考文献数: 62

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.

入藏号: WOS:000391475200002

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; NOISE REMOVAL; INTERPOLATION; RECONSTRUCTION; REGISTRATION; HALLUCINATION; ALGORITHMS; RESOLUTION; DECISION

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ESI 高被引论文: Y

ESI 热点论文: N

第 30 条, 共 45 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.)

来源出版物: MEDITERRANEAN JOURNAL OF MATHEMATICS 卷: 13 期: 6 页: 5177-5194 DOI: 10.1007/s00009-016-0800-y 出版年: DEC 2016

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使用次数 (最近 180 天): 1

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引用的参考文献数: 27

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.

入藏号: WOS:000387090000085

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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第 31 条, 共 45 条

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)

来源出版物: EXPOSURE AND HEALTH 卷: 8 期: 3 页: 311-329 DOI:

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引用的参考文献数: 79

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, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, TDS, SO<sub>4</sub><sup>2-</sup>, and F<sup>-</sup> are the main contaminants affecting its suitability for drinking purpose. Residents in the study area are at high health risk, and NO<sub>3</sub><sup>-</sup> 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 dominate exposure pathway of health risk. Therefore, urgent and efficient measures must be taken to combat groundwater pollution and reduce health risk in the area.

入藏号: WOS:000381997600002

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 32 条, 共 45 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)

来源出版物: EXPOSURE AND HEALTH 卷: 8 期: 3 页: 331-348 DOI: 10.1007/s12403-016-0193-y 出版年: SEP 2016

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使用次数 (2013 年至今): 100

引用的参考文献数: 74

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  $\text{Na}^+ > \text{Ca}^{2+} > \text{Mg}^{2+} > \text{K}^+$  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  $\text{HCO}_3$  center dot  $\text{SO}_4$ -Ca type, and then to  $\text{HCO}_3$  center dot  $\text{SO}_4$ -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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ESI 热点论文: N

第 33 条, 共 45 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)

来源出版物: EXPOSURE AND HEALTH 卷: 8 期: 3 页: 361-379 DOI: 10.1007/s12403-016-0205-y 出版年: SEP 2016

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使用次数 (最近 180 天): 31

使用次数 (2013 年至今): 140

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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 km<sup>2</sup>, 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<sup>-</sup>), nitrate (NO<sub>3</sub>-N), nitrite (NO<sub>2</sub>-N), ammonia nitrogen (NH<sub>4</sub>-N), major ions (Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, HCO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup>), and heavy metals (Cu, Mn, Zn, As and Cr<sup>6+</sup>). 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<sup>+</sup> was most abundant followed by Ca<sup>2+</sup>, then Mg<sup>2+</sup>, and then K<sup>+</sup>. For anions, HCO<sub>3</sub><sup>-</sup> were more abundant than SO<sub>4</sub><sup>2-</sup> and Cl<sup>-</sup>. 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, NH<sub>4</sub>-N, NO<sub>3</sub>-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: NO<sub>3</sub><sup>-</sup> > F<sup>-</sup> > As > Mn > NO<sub>2</sub><sup>-</sup> > Cr > NH<sub>4</sub><sup>+</sup> > 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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第 34 条, 共 45 条

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)

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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; TIME-VARYING DELAYS;

EXPONENTIAL STABILITY; DIFFERENTIAL-EQUATIONS

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ESI 高被引论文: Y

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第 35 条, 共 45 条

标题: Predication of nonlinear heat transfer in a convective-radiative fin with temperature-dependent properties by the collocation spectral method

作者: Sun, YS (Sun, Yasong); Ma, J (Ma, Jing); Li, BW (Li, Benwen); Guo, ZX (Guo, Zhixiong)

来源出版物: NUMERICAL HEAT TRANSFER PART B-FUNDAMENTALS 卷: 69 期: 1

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摘要: The applicability of the collocation spectral method (CSM) for solving nonlinear heat transfer problems is demonstrated in a convective-radiative fin with temperature-dependent properties. In this method, the fin temperature distribution is approximated by Lagrange interpolation polynomials at spectral collocation points. The differential form of the energy equation is transformed to a matrix form of algebraic equations. The computational convergence of the CSM approximately follows an exponential decaying law; and thus, it is a very simple and effective approach for a rapid assessment of nonlinear physical problems. The effects of temperature-dependent properties such as thermal conductivity, surface emissivity, heat transfer coefficient, convection-conduction parameter, and radiation-conduction parameter on the fin temperature distribution and efficiency are discussed.

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语言: English

文献类型: Article

KeyWords Plus: THERMAL-CONDUCTIVITY; MULTIPLE NONLINEARITIES; TRANSFER COEFFICIENT; GENERATION; EFFICIENCY; PLATES; FLOW

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第 36 条, 共 45 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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引用的参考文献数: 37

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 37 条, 共 45 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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ESI 热点论文: N

第 38 条, 共 45 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 HCO<sub>3</sub>-Ca and mixed HCO<sub>3</sub> center dot SO<sub>4</sub>-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), SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, 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: NORTHWEST CHINA; PLAIN BURDUR/TURKEY; ALLUVIAL AQUIFER; PENGYANG COUNTY; SAUDI-ARABIA; INDIA; FLUORIDE; HYDROGEOCHEMISTRY; SUITABILITY; MECHANISMS

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第 39 条, 共 45 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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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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第 40 条, 共 45 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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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 ( $[H_2S]_{aq} > 11 \mu M$ ) 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 O<sub>2</sub>-rich compared to O<sub>2</sub>-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 O<sub>2</sub>-deficient Proterozoic oceans to widely oxygenated later Phanerozoic oceans. (C) 2015 Elsevier Ltd. All rights reserved.

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语言: English

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KeyWords Plus: EARLY ANIMAL EVOLUTION; ANOXIC EVENT 2; SOUTH CHINA; BLACK-SEA; DOUSHANTUO FORMATION; METAZOAN EVOLUTION; EUXINIC SEDIMENTS; MARINE-SEDIMENTS; YANGTZE PLATFORM; MASS EXTINCTION

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ESI 高被引论文: Y

ESI 热点论文: N

第 41 条, 共 45 条

标题: Microwave synthesis of a novel magnetic imprinted TiO<sub>2</sub> 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)

来源出版物: CHEMICAL ENGINEERING JOURNAL 卷: 249 页: 15-26 DOI: 10.1016/j.cej.2014.03.077 出版年: AUG 1 2014

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使用次数 (最近 180 天): 29

使用次数 (2013 年至今): 252

引用的参考文献数: 49

摘要: Magnetic imprinted TiO<sub>2</sub> 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 TiO<sub>2</sub>@SiO<sub>2</sub>@Fe<sub>3</sub>O<sub>4</sub> (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  $1.08 \text{ min}^{-1}$ . The coefficient of selectivity ( $k(\text{selectivity})$ ) of MITP relative to TSF and magnetic non-imprinted TiO<sub>2</sub> 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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语言: English

文献类型: Article

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

KeyWords Plus: SOLAR LIGHT IRRADIATION; TITANIUM-DIOXIDE; WATER-TREATMENT; WASTE-WATER; REMOVAL; DEGRADATION; ANTIBIOTICS; PERFORMANCE; MICROSPHERES; POLYMER

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第 42 条, 共 45 条

标题: Microwave-assisted in situ synthesis of reduced graphene oxide-BiVO<sub>4</sub> 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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使用次数 (最近 180 天): 19

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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) -BiVO<sub>4</sub> composite photocatalysts. The as-produced RGO-BiVO<sub>4</sub> composite photocatalysts show extremely high enhancement of CIP degradation ratio over the pure BiVO<sub>4</sub> photocatalyst under visible light. Specially, the 2 wt% RGO-BiVO<sub>4</sub> 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 BiVO<sub>4</sub> particles. The enhancement of photocatalytic activities of RGO-BiVO<sub>4</sub> 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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语言: English

文献类型: Article

作者关键词: Microwave-assisted method; Photocatalyst; BiVO<sub>4</sub>; Reduced graphene oxide; Ciprofloxacin

KeyWords Plus: VISIBLE-LIGHT IRRADIATION; MONOCLINIC BISMUTH VANADATE; EXFOLIATED GRAPHITE OXIDE; NANO-SIZED BIVO<sub>4</sub>; PHOTOELECTROCHEMICAL DECOMPOSITION; SEMICONDUCTOR COLLOIDS; HYDROGEN-PRODUCTION; FILM ELECTRODES; WATER OXIDATION; NANOSHEETS

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第 43 条, 共 45 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 (最近 180 天): 2

使用次数 (2013 年至今): 39

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 44 条, 共 45 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): 2

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<sub>x</sub> 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

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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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ESI 热点论文: N

第 45 条, 共 45 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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使用次数 (2013 年至今): 31

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, NO<sub>x</sub> 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

文献类型: Article

作者关键词: Biodiesel; Soybean crude oil; Combustion; Emissions; Performance

KeyWords Plus: EMISSION; ESTERS

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ESI 热点论文: N

## 附录 2: 长安大学 ESI 热点论文 (2019 年 3 月 14 日更新)

第 1 条, 共 3 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)

来源出版物: SCIENCE OF THE TOTAL ENVIRONMENT 卷: 626 页: 1121-1135 DOI: 10.1016/j.scitotenv.2018.01.124 出版年: JUN 1 2018

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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: PARTICLE SWARM OPTIMIZATION; ARTIFICIAL NEURAL-NETWORK; INFERENCE SYSTEM ANFIS; DATA MINING TECHNIQUES; LOGISTIC-REGRESSION; SPATIAL PREDICTION; FREQUENCY RATIO; RANDOM FORESTS; FUZZY; MULTIVARIATE

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第 2 条, 共 3 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

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

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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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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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