

中国科学引文数据库 (CSCD) 核心库期刊
全国中文核心期刊
中国科技核心期刊

ISSN 1672-643X
CN 61-1413/TV

水资源与水工程学报

JOURNAL OF WATER RESOURCES AND WATER ENGINEERING

SHUIZIYUAN YU SHUIGONGCHENG XUEBAO

(第33卷 第2期 Vol.33 No.2)

水资源与水工程学报

第三十三卷 第二期

二〇二二年四月出版

ISSN 1672-643X



主办 西北农林科技大学

主管 中华人民共和国教育部

2
2022

水 资 源 与 水 工 程 学 报

SHUIZIYUAN YU SHUIGONGCHENG XUEBAO

2022 年 第 33 卷 第 2 期(总第 162 期)

目 次

· 水文水资源 ·

黄河流域水资源利用与经济发展脱钩分析——基于水量和水质视角	杨燕燕,王永瑜,徐绮阳(1)
基于 GRA-TOPSIS 法云南省水资源承载力评价及障碍因子诊断 ...	马继敏,脱云飞,王倩,王飞,郑阳,杜文娟(11)
基于 SWAT 模型分析嘉陵江流域蓝、绿水资源量的时空变化特征	杨昊,倪福全,邓玉,沈敬雄(18)
改进 TOPSIS 法在甘肃省农村饮水安全评价中的应用	陈雨晴,席海洋,李斌,程文举(27)
南宁市设计降雨及其总量控制率时空异质性特征	马秋,杨云川,黎倩云,周津羽,韦姣峯,廖丽萍,韦钧培(35)
汾河中游河道生态流量分析	李梦瑶,付兴涛(45)
不同回灌补源模式下石川河富平地下水库数值模拟	张紫瑶,王继玲,周维博,冯缠利,高建辉(54)
基于空间均衡的水资源合理配置研究	樊红梅,刘晓民,刘廷玺,王文娟,冯艳(61)
变化环境下径流演变的研究方法进展	宋益涛,王双涛,罗平平,查显宝,徐承毅,曹哲,朱伟(68)
2000-2019 年新疆水-能源-粮食系统耦合协调发展研究	冯梅青,陈亚宁,焦黎,段伟利,陈世峰(77)
新疆祁漫塔格地区地下水化学特征及成因分析	鲁涵,曾妍妍,周金龙,王松涛,杜江岩(85)
土地利用及降雨和气温变化对生态流量的影响研究	赖敬明,邹进,张洪波,姚彤悦(93)
基于 SE-DEA-IAHP 方法的贵州省岩溶地区水资源可持续利用效率评价	李腾,李博,屈伟,楚靖岩,罗玉岚,刘磊(101)
数值集合降雨预测的校正后处理方法研究	郝福亮,王旭(108)

· 水利水电工程 ·

多洞联合泄洪通风补气系统运行特性	马斌,魏建根,王孝群,杜帅群,练继建(115)
船闸下游口门区水流结构特征及流速极值预测方法	齐春风,彭伟,欧阳群安,普晓刚(124)
耦合引航道二维水流模型的向家坝水电站运行模式研究	曾勇红,黄敏程(130)
基于正交试验法的河岸带水热耦合模型敏感参数识别	李昱春,张文兵,任杰,李舸航,甘磊,徐力群(136)
不同扩散角下单侧渐扩消力池水力特性研究	杜振康,尹进步,朱光明,何红,闫秀秀(144)

· 水工结构工程 ·

工作桥对进水塔整体结构的抗震性能影响研究	张汉云,张云娟,张生太,王晨,王英洁(152)
基于表面能理论的改性沥青与集料黏附性研究	李昇,张岩,焦凯(158)
阴极型阻锈剂在氯盐混凝土中阻锈效果的研究	林鑫源,梅侃泽,李晓珍,舒海斌,王建民,柳俊哲(165)

· 岩土工程 ·

基于蚁群算法优化极限学习机模型的滑坡位移预测	曹博,汪帅,宋丹青,杜涵,刘光伟,周志伟(172)
水岩循环作用下变质砂岩力学参数劣化试验研究	王维,顾峰,何刘,刘钊,曹廷,李国庆(179)
延安新区黄土压缩特性试验研究	王博,黄雪峰,邱明明,王寒(186)

· 农业水土工程 ·

1980-2019 年海河流域气象干旱和农业干旱变化及传播特征	相恺政,赵安周,胡小枫,张向蕊(194)
基于地下水安全的井渠结合灌区节水潜力分析——以永定河流域张家口段为例	李晓倩,彭致功,张宝忠,徐海洋,魏征(203)
涌泉根灌下陕北山地苹果作物系数确定与蒸散量估算 ...	李哲,费良军,尹永乐,李中杰,刘腾,郝琨,彭有亮(209)
1995-2015 年宁夏沿黄城市带蒸散发时空变化特征	马小燕,朱晓雯,赵金涛,石云(216)

期刊基本参数: CN61-1413/TV * 1990 * b * A4 * 224 * zh * P * ¥30.00 * 1000 * 29 * 2022-04

Journal of Water Resources and Water Engineering

(Bimonthly)

Vol. 33 No 2. Apr. 2022

CONTENTS

Decoupling analysis of water utilization and economic development in the Yellow River Basin: Based on quantity and quality of water resources	YANG Yanyan, WANG Yongyu, XU Qiyang (1)
Evaluation of water resources carrying capacity in Yunnan Province based on GRA – TOPSIS and diagnosis of its obstacle factors	MA Jimin, TUO Yunfei, WANG Qian, et al (11)
Temporal and spatial variation characteristics of blue and green water resources in Jialing River Basin based on SWAT model	YANG Hao, NI Fuquan, DENG Yu, et al (18)
Application of improved TOPSIS method in rural drinking water safety evaluation in Gansu Province	CHEN Yuqing, XI Haiyang, LI Bin, et al (27)
Spatio-temporal heterogeneity of the design rainfall and its total amount control rate in Nanning City	MA Mi, YANG Yunchuan, LI Qianyun, et al (35)
Analysis on ecological flow in the middle reaches of Fen River	LI Mengyao, FU Xingtao (45)
Numerical simulation of Shichuan River Fuping Groundwater Reservoir under different recharge source modes	ZAHNG Ziyao, WANG Jiling, ZHOU Weiibo, et al (54)
Study on rational allocation of water resources based on spatial balance	FAN Hongmei, LIU Xiaomin, LIU Tingxi, et al (61)
Advances in research methods of runoff evolution under changing environment	SONG Yitao, WANG Shuangtao, LUO Pingping, et al (68)
Research on the coupling and coordinated development of water – energy – food system in Xinjiang during 2000 – 2019	FENG Meiqing, CHEN Yaning, JIAO Li, et al (77)
Hydrochemical characteristics of the groundwater in Qimantage area of Xinjiang and the formation causes	LU Han, ZENG Yanyan, ZHOU Jinlong, et al (85)
Effects of land use, precipitation and temperature change on ecological flow	LAI Jingming, ZOU Jin, ZHANG Hongbo, et al (93)
Evaluation of sustainable utilization efficiency of water resources in karst areas of Guizhou Province based on SE – DEA – IAHP	LI Teng, LI Bo, QU Wei, et al (101)
Post-processing method of numerical ensemble rainfall prediction	HAO Fuliang, WANG Xu (108)
Operating characteristics of multi-tunnel joint flood discharge and ventilation system	MA Bin, WEI Jiange, WANG Xiaoqun, et al (115)
Flow structure characteristics and extreme velocity prediction method in the downstream entrance area of the navigation lock	QI Chunfeng, PENG Wei, OUYANG Qun'an, et al (124)
Operational modes of Xiangjiaba Hydropower Station coupled with two-dimensional hydrodynamic model of the navigation channel	ZENG Yonghong, HUANG Mincheng (130)
Identification of sensitive parameters for hydrothermal coupling model of riparian zone based on orthogonal test method	LI Yuchun, ZHANG Wenbing, REN Jie, et al (136)
Hydraulic characteristics of unilateral divergent stilling basin under different diffusion angles	DU Zhenkang, YIN Jinbu, ZHU Guangming, et al (144)
Influence of working bridge on seismic performance of integral system of intake towers	ZHANG Hanyun, ZHANG Yunjuan, ZHANG Shengtai, et al (152)
Research on adhesion between modified asphalt and aggregate based on surface energy theory	LI Sheng, ZHANG Yan, JIAO Kai (158)
Corrosion resistance effect of cathodic inhibitors in chloride concrete	LIN Xinyuan, MEI Kanze, LI Xiaozhen, et al (165)
Landslide displacement prediction based on extreme learning machine optimized by ant colony algorithm	CAO Bo, WANG Shuai, SONG Danqing, et al (172)
Experimental study on deteriorating characteristics of metamorphic sandstone mechanical parameters under the effect of wetting – drying cycles	WANG Wei, GU Feng, HE Liu, et al (179)
Experimental research on compression characteristics of loess in Yan'an New Area	WANG Bo, HUANG Xuefeng, QIU Mingming, et al (186)
Variation and propagation characteristics of the meteorological and agricultural drought in the Haihe River Basin from 1980 to 2019	XIANG Kaizheng, ZHAO Anzhou, HU Xiaofeng, et al (194)
Water-saving potential analysis of irrigation districts with conjunctive use of groundwater and surface water based on the concept of groundwater safety: A case study of Zhangjiakou section in the Yongding River Basin	LI Xiaoqian, PENG Zhigong, ZHANG Baozhong, et al (203)
Crop coefficient and evapotranspiration estimation of apple in northern Shaanxi under surge-root irrigation	LI Zhe, FEI Liangjun, YIN Yongle, et al (209)
Temporal and spatial variation characteristics of evapotranspiration along the Yellow River Urban Belt in Ningxia from 1995 to 2015	MA Xiaoyan, ZHU Xiaowen, ZHAO Jintao, et al (216)