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## 城市供水系统风险传播机理模型研究(PDF)

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Title: Study on risk transmission mechanism model of urban water supply system

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关键词: [城市供水系统](#); [风险](#); [传播机理](#); [传播模式](#)

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摘要: 根据城市供水系统不同子系统结构功能关系的高度关联性 & 水流流向的单向性特征,将风险传播理论用于供水系统风险分析研究。通过对供水系统风险传播条件和传播基本模式的分析,建立了供水系统风险传播数学模型,提出了一种新的城市供水系统风险分析方法。该方法根据不同子系统面临的风险,基于风险传播递归算法逐级计算,最终得到供水系统的总风险,很好地解决了供水系统总体风险评价的系统性问题,可用于设计或改造供水系统时的风险分析评价。

Abstract: According to the high correlation degree in structure-function respect of different subsystems and the one-way characteristics of water flow,the risk transmission theory was used to analyze the risk of urban water supply system for the first time in this paper.Firstly,the risk transmission conditions and transmission modes of urban water supply system were analyzed.Secondly,the risk transmission model of urban water supply system was established.Then,a new risk analysis method for urban water supply system was proposed.This method was based on the risks of different subsystems,and the risk transmission recursive algorithm was used to compute the total risk of urban water supply system.So it overcomes the inadequacies of previous risk assessment methods,and could be used for analysis and assessment the risk of urban water supply system.

导航/NAVIGATE	
<a href="#">本期目录/Table of Contents</a>	
<a href="#">下一篇/Next Article</a>	
<a href="#">上一篇/Previous Article</a>	
工具/TOOLS	
<a href="#">引用本文的文章/References</a>	
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统计/STATISTICS	
<a href="#">摘要浏览/Viewed</a>	152
<a href="#">全文下载/Downloads</a>	79
<a href="#">评论/Comments</a>	



- [1] Mondal MS, Wasimi SA. Evaluation of risk-related performance in water management for the ganges delta of bangladesh[J]. Journal of Water Resources Planning and Management, 2007, (5):179-187.
- [2] 吴小刚, 张土乔. 城市给水网系统的故障风险评价决策技术[J]. 自然灾害学报, 2006, 15(2):73-78.
- [3] 王元明, 赵道致, 徐大海. 项目供应链的风险单向传递机理及其对策[J]. 北京交通大学学报(社会科学版), 2009, 8(4):47-52.
- [4] 石友蓉. 风险传导机理与风险能量理论[J]. 武汉理工大学学报(信息与管理工程版), 2006, 28(9):48-51.
- [5] 杨宏亮. 长春市供水系统风险评价研究[D]. 长春: 吉林大学, 2008:7.
- [6] Ladislav T, Jan R, Tomas J. Risk analysis of water distribution systems[J]. Security of Water Supply Systems: From Source to Tap, 2006, (8):169-182.
- [7] Fabera MH, Stewart MG. Risk assessment for civil engineering facilities: critical overview and discussion[J]. Reliability Engineering and System Safety, 2003, 80:173-184.
- [8] AWWA Research Foundation and Sandia National Laboratories. Risk assessment methodology for water utilities (QAM-WTM)[R]. AWWA Research Foundation, Denver, Colorado, 2002:15.
- [9] Arnold B B, Robert J E, Patricia K F, et al. Scalable systems approach for critical infrastructure security[R]. Sandia National Laboratories of USA, 2002:32-33.
- [10] 李存斌. 项目风险元传递理论与应用[M]. 北京: 中国水利水电出版社, 2009:30-31.
- [11] Bertalanffy L V. General systems theory[M]. New York: George Braziller Inc, 1973:50-52.

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