

# Risk management modeling and its application in maritime safety (PDF)

《船舶与海洋工程学报》 [ISSN:1002-2848/CN:61-1400/f] 期数: 2008年04 页码: 0 栏目: 出版日期: 2008-12-25

Title: Risk management modeling and its application in maritime safety

作者: [秦庭荣](#); [陈伟炯](#); [曾祥堃](#)

School of Merchant Marine; Shanghai Maritime University; Library of Shanghai Maritime University; Shanghai Maritime University; Information Engineering College; Shanghai Maritime University

Author(s): [QIN Ting-rong](#)<sup>1</sup>; [CHEN Wei-jiong](#)<sup>1; 2</sup>; [ZENG Xiang-kun](#)<sup>3</sup> 1.School of Merchant Marine; Shanghai Maritime University; Shanghai 200135; China 2.Library of Shanghai Maritime University; Shanghai Maritime University; Shanghai 200135; China 3.Information Engineering College; Shanghai Maritime University; Shanghai 200135; China

关键词: [risk flowchart](#); [safety assessment](#); [GMO model](#); [MMEM theory](#); [QRA](#)

分类号: U698

DOI: -

文献标识码: A

摘要: Quantified risk assessment(QRA) needs mathematicization of risk theory.However,attention has been paid almost exclusively to applications of assessment methods,which has led to neglect of research into fundamental theories,such as the relationships among risk,safety,danger,and so on.In order to solve this problem,as a first step,fundamental theoretical relationships about risk and risk management were analyzed for this paper in the light of mathematics,and then illustrated with some charts.Second,man-machine-environment-management(MMEM) theory was introduced into risk theory to analyze some properties of risk.On the basis of this,a three-dimensional model of risk management was established that includes:a goal dimension;a management dimension;an operation dimension.This goal management operation(GMO) model was explained and then emphasis was laid on the discussion of the risk flowchart(operation dimension),which lays the groundwork for further study of risk management and qualitative a...更多nd quantitative assessment.Next,the relationship between Formal Safety Assessment(FSA) and Risk Management was researched.This revealed that the FSA method,which the international maritime organization(IMO) is actively spreading,comes from Risk Management theory.Finally,conclusion were made about how to apply this risk management method to concrete fields efficiently and conveniently,as well as areas where further research is required.

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备注/Memo: Supported by the Shanghai Leading Academic Discipline Project Foundation under Grant No.T0602;; Supported by the Shanghai Education Commission Project Foundation under Grant No.05FZ10