

Introduction for Volume 7, Issue 2

In the present issue of Journal of Risk analysis and Crisis Response(JRACR) , Volume 7, Issue 2 (2017), there are 4 contributions written in English and 1 contribution in Chinese with English abstracts. The papers can be divided into four topics: political risk, hazard assessment, risk analysis and management, and Eco-environmental quality evaluation.

There is one paper in political risk, “The Risk of Power Imbalance in Project Delivery: A Study of Large Victorian Public Infrastructure Projects” by Zarei et al.. In this paper, seven large infrastructure projects in the state of Victoria, Australia are examined through a workshop involving key stakeholders who had played active roles in these projects. The findings revealed that power asymmetry between central and delivery agencies exist and would lead to optimism bias, which in turn creates uncertainty and risk of over-promising in the business case. Power asymmetry exist in large infrastructure projects because the central agencies usually only have the responsibility but not the skill set needed to measure the robustness of the business case. These types of political risks are difficult to quantify and even detect. This paper recommends a few managerial strategies that have referential values and/or can be used to mitigate and circumvent this risk.

There is one paper in hazard assessment, “An Algal Specific Growth Rate Relation Model to Assess Dynamical Brown Tide Disasters” by Wen et al., in which the authors consider the coupling effect of nutrient and temperature on algal growth. They propose an algal specific growth rate relation model to assess dynamical brown tide disasters caused by *Aureococcus Anophagefferens*. To verify the model, we processed data from coastal waters along Qinhuangdao, China, during January 2014 to December 2014, where GIS spatial analysis tools were used to process satellite data on nutrient, chlorophyll a, and temperature, and then calculated the hazard degree of *Aureococcus Anophagefferens* brown tide. The results show that (1) the suggested model is in accordance with Shelford’s law of tolerance, which states that each species thrives best at a particular value of an environmental variable (the optimum) and cannot survive when the value is either too low or too high; (2) the coastal water along Qinhuangdao was more likely prone to brown tide blooms from May to July than the other months of the year in 2014; (3) the hazard degree of *Aureococcus Anophagefferens* in areas near the shore was higher than that in areas far from the shore in the same months. These findings would provide a technical basis to effective response to brown tide disasters in Qinhuangdao coastal waters.

There are two papers in risk analysis and management. In the first paper “Risk Combinations in the Risk Analysis and Management” by Milík Tichý, the author thinks of that the analogies between the risks carried by entities and the physical loads affecting building and engineering structures can be applied in the studies of risks forming groups arranged according to specified definitions. Four classes of relations among risks belonging to a particular hazard are to be distinguished: existential, sequential, physical, and statistical. The type and number of possible groupings of combined risks, called "risk combinations", depends upon the type of existential and sequential relations among the risks affecting the respective entity. The results of the analysis from this study can be used in decision makings on which risks are to be considered in the decisions. The combined-risk problem relates to various fields of risk engineering and management as, such as seismic engineering, medicine, agriculture, economic engineering. The second paper “A Study on Marine Vessels’ Path Optimization under Typhoon Scenarios” proposes a hybrid algorithm integrating Genetic Algorithm (GA) with Receding Horizon Control (RHC), which considers real-time typhoon data, marine environment data including ocean currents and reefs etc., as well as safety operation requirements for marine voyage. Then, simulation experiments are conducted to test the proposed method. The experimental results indicate that the new algorithm is effective and efficient to optimize voyage paths for marine vessels under typhoon scenarios, i.e., when compared with global path optimization, the new algorithm can improve the cost-efficiency of voyage path with safety guarantee.

There is one paper in Eco-environmental quality evaluation, “Evaluation on Eco-Environmental Quality of dongsheng district” by Wu et al., in which authors select biological abundance index, vegetation coverage index, land desertification index, water density index and pollution load index to evaluate the quality of ecological environment. The evaluation result shows that the ecological environment quality of Dongsheng district is "normal", the degree of vegetation coverage is moderate, so as to the general level of biological diversity, and it is suitable for human to live, but sometimes exist restrictive factors limit human survival. The EI value increased from 52.06 of 2005 to 53.11 in 2014, and land ecological environment quality of Dongsheng district has rising trend from the overall view, but the amplitude variations in the ecological environment condition has no obvious change, land ecological environment is good, the land ecosystem structure is complete, and its function is basically perfect.

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