

Editors' Introduction

Modern society is a competitive society where reducing existent costs is very important, which also is the ultimate goal of risk analysis and crisis response. In the present issue such efforts have been embodied in these papers. This issue contains six papers. The first contribution is written in English and the last five in Chinese with English abstracts. The papers can be divided into four categories: crisis management, risk assessment, time series prediction and cloud model assessment technique.

The crisis management category includes the paper "Gezi Park Crisis" by Ali Ekşi. Gezi Park is a public park located in the center of Istanbul, Turkey. The objective of this article is to evaluate the Gezi Park incident which started on 28 May 2013 and continued until the end of June in terms of crisis management. The reasons why a civil opposition act that started against the decision taken by the government regarding the environment transformed into a serious crisis due to an unmanageable process by the government will be questioned. The reasons for the incident and why it could not be prevented will be evaluated from the perspective of crisis management. Problem areas focusing especially on crisis communication during the crisis management process, the effect of messages given by the administrators along with the use of disproportionate force in deepening the crisis along with the lessons learned from the crisis will be evaluated. The most important factors that transformed the events starting with representation problem into a crisis have been communication problems and the disproportionate force used on the protesters. Turkey should develop a proactive approach in crisis management and should develop permanent solutions to solve the communication problem. The study is important since this was the first time that an environmentalist action transformed into a social movement causing a serious crisis in a country like Turkey.

The risk assessment category includes two papers. The first paper is "Dynamic Vulnerability Analysis of Population for Flood Disaster in Urban Area" by Xilei Pang. In this paper, based on information diffusion theory and incomplete information, the changes of the affected population in urban flood is analyzed and the function relationship between the hazard (rainstorm) and disaster-bearing body (population), which is called vulnerability curve of population in flood disaster, is identified. This curve not only can present some changing extent of urban flood risk, but also could provide an important basis for integrated risk assessment of urban flood. The second paper "Internal Exposure Simulation Based on Exposure Related Dose Estimating Model" by Qian Zhang, Deyin Huang, Mao Liu and Minyan Li. In this paper, occupational chemical poisons' physiologically based pharmacokinetic (PBPK) models are established to simulate metabolic processes in vivo based on exposure simulation software-exposure related dose estimating model (ERDEM). PBPK model establishing progress is described based on the development and utilization of ERDEM.

The time series prediction category includes one contribution of "WD-RBF Model and its Application of Hydrologic Time Series Prediction" by Dengfeng Liu, Dong Wang, Yuankun Wang, Lachun Wang and Xinqing Zou. A method of radial basis function network based on wavelet de-noising (WD-RBF) was proposed according to the nonlinear problem and noise in hydrologic time series. Wavelet coefficients of each scale were calculated through wavelet transform; soft-threshold was used to eliminate error in series. Reconstructed series were predicted by RBF network. The simulation and

prediction of WD-RBF model were compared with ARIMA and RBF network to show that wavelet de-noising can identify and eliminate random errors in series effectively; RBF network can mine the nonlinear relationship in hydrologic time series. Examples show that WD-RBF model has superiority in accuracy compared with ARIMA and RBF network.

The cloud model assessment technique category includes two papers. The first paper is “Cloud Model Assessment Research of Bijie Drought Risk” by Ying He, Mu Zhang and Wei Li. Bijie area locates in the northwest of Guizhou, China. In this paper, eight cities and counties of Bijie area are chosen as the research target. With the research foundation of natural disaster risk theory and drought risk formation principle, we start from dangerousness, exposure, vulnerability and the ability to prevent disaster to filter out 23 indexes range from social status, economy, weather and geology to construct the assessment system of Bijie drought risk. To solve the uncertainty of quantitative description for drought risk assessment index and the judge of assessment result, cloud model and entropy weight method are implemented to decide how much percentage the city or county belong on each index. In the end, we use the weight of 23 indexes to get the drought risk level each city or county belongs to.

The last contribution “Water Security Risk Assessment of the Yellow River Basin Based on Constrained-Random Weight and Cloud Mode” by Chenye Song, Ren Zhang, Aixia Zhou, et al. In this paper, to overcome the difficulty of the uncertainty hardly fusing into risk assessment outputs, a new risk assessment technique of combining constrained-random weight and cloud model is introduced to perform the risk assessment of water security in the Yellow River basin. The effect of knowledge deficiency on risk assessment can be illustrated on the instability of risk series by the constrained-random weight method; the result of assessment can incorporate the randomness and fuzziness of risks and corresponding assessments, and transition of quantified risk series into qualitative risk level can be possible as the presence of the cloud model. Experiment about the water security risk assessment of the Yellow River basin proved the validity and applicability of this method.

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