

## 2<sup>nd</sup> International Conference on **Big Data Analysis and Data Mining**

November 30-December 01, 2015 San Antonio, USA

### **D-MMA-Data mining using self-organizing feature maps in earthquake prediction**

**Mostafa Allameh Zadeh**

International Institute of Earthquake Engineering and Seismology, Iran

Recent advances in machine learning make it possible to design efficient prediction algorithms for earthquake forecasts. Self Organizing Feature Maps (SOFM) technique can be used to detect precursory seismic activation or quiescence and make earthquake forecast. Here I apply the SOFM algorithm for optimal forecasting of large earthquakes in Iran, using the earthquakes data catalogue. The purpose of this method is to describe the use of the neural network model to generate synthetic data catalogue in the local regions and propose a fast algorithm for synthetic earthquake catalog generation based on an original catalog. More specifically, we also propose a Monte Carlo simulation model which can generate data from a small number of earthquake aftershocks and discusses the relationship between the complexity of an earthquake and its aftershocks. This is a very stimulating article about the very important issue of making reliable decisions under uncertainty. This article shows how machine-learning techniques can be complemented with provably valid measures of accuracy and reliability.

#### **Biography**

Mostafa Allameh Zadeh has completed his PhD from International Institute of Earthquake Engineering and Seismology (IIEES). He is the Faculty Member of Seismology Department, a premier Bio-Soft service organization. He has published more than 35 papers in reputed journals and has been serving as an Editorial Board Member of reputed Journals.

[zadeh66@hotmail.com](mailto:zadeh66@hotmail.com)

#### **Notes:**