

Joint algorithm of multiple forecast models

*Yu-Sheng Sun¹, Chien-Chih Chen¹, Hsien-Chi Li¹, Ling-Yun Chang¹, Hong-Jia Chen¹, Zheng-Kai Ye¹

1. National Central University, Taiwan (Republic of China)

Complexity process and indirect observation make earthquake forecast difficult, but it is an important issue for the lives and property. Many theories are proposed to forecast earthquake, but they are more or less still under debate. However, probability is the most popular mode to describe what cannot predict deterministically such as weather. Through the probabilistic way, this study combines three different forecast models to improve performance. The first model is Pattern Informatics (PI) which analyzes the changing of seismic activity nearby epicenter before great earthquake occurs. The second one based on seismic recurrence considers seismic activity changing to discuss the probability for quiescence state by non-homogeneous Poisson forecast model. The third model is GEMSTIP algorithm that applies the time of increased probability (TIP) concept on the geoelectric monitoring system (GEMS). This model suggests that there are statistical correlations between the geoelectric system and earthquakes. Each model has its own property of resolution on space or time, and therefore we try to capture the merits from different models to increase the ability of forecast.

Keywords: forecast, Pattern Informatics, quiescence, geoelectric, seismic activity