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Improving innovative mathematical model for earthquake prediction

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The innovative mathematical model for earthquake prediction (IMMEP) based on spatial connection theory and reverse Poisson's distribution was developed. Using data from National Earthquake Information Center (NEIC), spatial connection models were constructed using KML programming language in Google Earth program for six fault zones around the world: California, Central USA, Northeast USA, Hawaii, Turkey, and Japan. The Poisson Range Identifier (Pri) values were computed, and the Poisson's distribution was applied to the Pri values to arrive at a distance factor. Based on the reverse Poisson's distribution, earthquake predictions were carried out. To improve the innovative mathematical model for earthquake prediction, further analysis was carried out on California fault zone earthquake data, utilizing Poisson's, exponential, and hyper geometric distributions. A rigorous mathematical algorithm was used to triangulate and merge the results from the analysis into a common distance factor. The improved distance factor was utilized to carry out the earthquake prediction. A significant improvement of the prediction for the California fault zone was observed. By using technological advances and improving the probability of future earthquake predictions, this research provides an effective contribution to earth science. Utilizing the results of this research, disaster management agencies around the world can allocate their resources in appropriate locations to assist people during evacuation and save lives.

Biography

Suganth Kannan is the President of MathforUS LLC, a small business dedicated to applied research by building higher-level mathematical models to find solutions to pressing global problems. He has organized and moderated a bed bug symposium for Florida Entomological Society in 2011. He has presented at the Fifth International Conference on Engineering Failure Analysis, 2012 held at The Hague, Netherlands. He has published a scientific paper in Elsevier's Journal of Engineering Failure Analysis.

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