

## **1.5-P21. Earthquake Prediction Model with Source Mechanisms of Earthquake Polarity Identification Through Ball Focal Classification using ANFIS and PCA technique**

This research is the study of historical data to be modeled predictions earthquake return period further events. Learning system data using ANFIS technique. In this technique the historical data set compiled into intervals of earthquake occurrence daily average in a year. Output to be obtained is a model return period earthquake events daily average in a year. Parameter source mechanism is described as the image of the focal sphere of the source mechanism of earthquakes beneath the Earth's surface, where the ball there is a section that is shaded according to the polarity that can illustrate how the direction, pressure, strain, collisions and inter-block area of the fault that occurred. Return period earthquake occurrence models that have been studied with respect to time by ANFIS, then performed the polarity recognition through image recognition techniques on the focal sphere using principal component analysis PCA method. So that for each model of return period earthquake events daily average year obtained will be obvious polarity fault mechanism that causes earthquakes. The validity of the precision accuracy of a return period earthquake prediction model was tested through correlation coefficient, RMSE and ISO 9126.

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