

Implication of Volcano-Tectonic and Fluid Movements on Seismic Activity in the Paka Geothermal Prospect

The aim of this research project is to study the relationship between seismicity and fluid circulation in a geothermal system at the exploration stage. Studies carried out on this relationship mainly are done when the injection of fluids back to the system has begun mainly in Kenya. This study will be carried out at the Paka Geothermal prospect which is located in the Rift Valley North of Lake Baringo. It is one of the shield volcanoes found in the Rift; it has a height of 1697 meters above sea level and covers an area of approximately 280 Km². The data obtained will be analyzed for a period of two to three years. The methods used will entail the following; the determination of hypo-central locations and fault plane solutions and estimation of the seismic hydraulic diffusivity. Software's used will include SEISCOMP3 and SEISAN for the determination of hypo-central locations and focal mechanisms, the seismic hydraulic diffusivity will be estimated using the equation of linear growth of seismicity for the particular period of time.

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