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Seismic Hydraulic Diffusivity a tool for Geothermal Exploration

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The seismic hydraulic diffusivity is investigated to examine the implications fluid circulation has on the seismic activity at a geothermal prospect. The effect that fluid circulation has on the seismic activity is achieved by estimating the seismic hydraulic diffusivity from a source that originates from a point where the pore pressure propagates from for a distance (r) and time (t) from a single source that initiated the seismic swarms to each earthquake in the swarm.
To achieve this aim the following objectives are satisfied; The location of hypocentral locations to outline the seismic event location and correlate them with the causative faults, determining the focal mechanisms to establish the style of faulting and fault plane orientation and to estimate the seismic hydraulic diffusivity to establish the source properties in the causative faults using the following formula; r^2= 4*3.14*D*t where D is the seismic hydraulic diffusivity.
To achieve this a dense seismic network is required, in most cases due to the cost limitations just a few stations are set-up. The data from the seismic IMS stations can be used to improve the quality of data as it adds up to the seismic network and also improves results accuracy.

Promotional text

Geothermal Prospecting using the Seismic Hydraulic Diffusivity and IMS seismic data usefulness

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