

Hydrothermal fluid activity of the Tatun Volcano Group, Taiwan, revealed by self-potentials and seismicity

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The objective of our research was to unravel the evolutions of the hydrothermal activities in the Tatun Volcano Group, Taiwan. We observed the significant variations of monthly earthquake counts, daily cumulative earthquake counts, and self-potential power spectral densities (PSDs) after April 21, 2016, providing strong evidence to identify hydrothermal fluid activities. This was further confirmed by the simulated electrical impedances using the resistivity forward modeling. Thus, an upward hydrothermal fluid movement is required to generate weaker PSDs of self-potentials at different frequencies. Herein, we concluded that geoelectric monitoring, along with seismic monitoring, help to understand the evolution of a hydrothermal system beneath a volcanic region.

Keywords: Hydrothermal fluid, Tatun Volcano, self-potential

