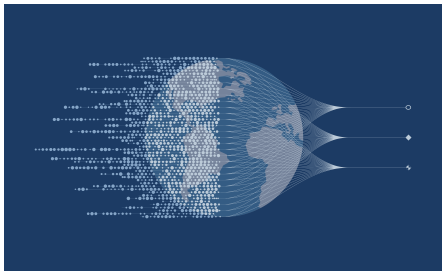

ID: **P3.5-710** Type: **E-poster**

Energy Exploration and Monitoring in Kenya: Using Geotool to characterize seismicity and seismic spectrum at the Menengai Geothermal Field.

Geothermal energy exploration has been going on in Kenya for the last five decades for green energy exploitation. Between the month of April and August 2024, twenty seismometers were installed throughout the Menengai geothermal field/Caldera and its' surrounding at a radius of 15Km using. The stations were installed with IGU-BD3C-5 Smart solo seismometer, a low-frequency, three-component sensor for three months. Monthly data retrieval was performed based on battery life of the seismometer. 100% of the data, with a good signal ratio, was collected within the months. The data quality was checked using the smart solo quality check for data gaps, GPS status and battery conditions. The seismicity was located using Geotool where four microearthquakes (MEQs) were well located. A spectral analysis of the two of the earthquakes, microearthquakes and local events using Geotool gives a frequency spectrum within the range of 0-25 Hz and 0-10 Hz respectively. They generally diffuse and maybe associated with a buried singular magmatic source. Further work is ongoing to locate more earthquakes to improve our understanding of the micro-seismicity of Menengai geothermal field.

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Session Classification: P3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data