[EE] Evening Poster | S (Solid Earth Sciences) | S-IT Science of the Earth's Interior & Tectonophysics

[S-IT26]Stress geomechanics integrations: Observations, Modelings and Implications (OMI)

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Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Stress geomechanics specifies how rocks respond to strain, fluid and heat that provide essential information on understanding seismic behaviors. Thus, some outreach researches address the stress state in the geological structures or along plate boundaries through geophysical, geodetic, geothermal and/or hydrological approaches, especially after recently great earthquakes. Such studies have raised the importance on the stress analysis, including stress evolution by seismic and volcanic activity, in-situ stress measurements, crust heterogeneity, and geodetic modeling for earthquake cycle. This session is to bring the multi-disciplinary studies together on stress geomechanics, including but not limited, to inland/ocean drilling, borehole measurement, focal mechanism of crustal and volcanic earthquakes, subsurface anisotropy analysis and geomechanical model applications. We focus our discussion not only on the observation in association with physical models, but also interdisciplinary cooperation in each research field.

[SIT26-P05]The stress analysis in geothermal drilling project: example in I-Lan, North-East Taiwan

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From 2015, Taiwan Geothermal Drilling Projects invested by National Energy Program-Phase II drilled two experiential boreholes to reach the geothermal reservoir in I-Lan, North-East Taiwan. This reach is focusing on the stress orientation and magnitude estimation in the deep section of HCL-2 by analyzing the Formation MicroImager (FMI) images and physical properties. This geomechanical model we proposed that the significant tensile fractures observed from 1400~2800 meters and point out the maximum horizontal principal stress is 30 degrees direction from North. The stress field in this borehole stays in the normal faulting stress regime to strike-slip regime depend on the local structure varieties.