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[EE] Evening Poster | S (Solid Earth Sciences) | S-SS Seismology

## [S-SS03]Induced and triggered seismicity: case-studies, monitoring and modeling techniques

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Induced and triggered seismicity occurs in conjunction with human activities such as reservoir impoundments, mining operations, conventional and non-conventional hydrocarbon production, geothermal energy exploitation, wastewater disposal, CO<sub>2</sub> sequestration and gas storage operations as well as volcanic and hydrogeological processes. The stability of faults is affected by external solicitations such as pore-pressure diffusion, relaxation effects and stress field perturbations related to mass and/or volume changes, dike intrusions and earthquake-earthquake interactions. A better understanding of the physical processes governing induced and triggered seismicity is thus important for assessing the risk of current and future industrial activities, including the geological disposal of nuclear waste.

The study of induced and triggered seismicity is inherently an interdisciplinary problem, which requires the combination of seismological, hydrogeological and geodetic data as well as a wide range of modeling approaches. This session covers the analysis and modeling of induced and triggered seismicity at different spatial scales and in different environments. We welcome contributions from earthquake and volcano seismology and geomechanics.

Relevant topics to be presented include - but are not limited to - new methods for microseismicity characterization (both natural and anthropogenic), spatio-temporal variations of physical parameters (including stress, pressure and temperature changes), spatio-temporal patterns of seismicity, modeling strategies and case-studies.

The goal of the session is to cover both observational, theoretical and experimental aspects on the topics summarized above.

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## [SSS03-P02]Simulation of spontaneous rupture of Ludian earthquake

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Keywords: Ludian earthquake; , simulation of spontaneous rupture; , curve finite difference method.

Ludian M6.5 earthquake is a moderate earthquake occurred in the latest seismic active period around Bayan Har block and its adjacent areas located southwest of China. The focal mechanism shows this earthquake is a high dip sinistral strike earthquake. Zhang Yong et al. used the seismic waveform data to retrieve the rupture process of the Ludian earthquake. The inversion results show that the Ludian earthquake is a conjugate rupture earthquake event. However, the geological Survey after earthquake showed that the seismogenic fault is BaguNao - xiaohe fault. The precise location of aftershocks also support this result. Therefore, this study aims to simulate the process of spontaneous rupture of Ludian earthquake in the BaguNao - xiaohe fault, to explore the influencing factors of Ludian earthquake rupture. The results show that the focal mechanism of Ludian earthquake is mainly affected by the background stress field. Distribution of fault slip is affected by fault geometry structure, stress field.

Non planar complex fault geometry structure causes the complex sliding displacement distribution of Ludian earthquake.