Dear Reviewer03,

Thanks for reviewing our manuscript. We will revise our manuscript based on your helpful comments after interactive discussion.

1) I suggest to use the thermoporoelasticity equation instead of the simple elasticity equation (eq. 1 in your manuscript) to evaluate the critical shear stress. This will help you to consider also the effect of temperature changes on stress, in addition to your different injection scenarios, in a more comprehensive way with respect to what you did in section 8.3.

Response 01: We were not able to fully comprehend parts of the this comment but strived to provide our response based on our best interpretation.

(1) In our manuscript, Eq.1 presents a useful framework for understanding how increasing the pore fluid pressure via fluid injection can trigger fault slip under different in-situ stress conditions.

(2) In Eq.1, the σ_n and τ_c can consider all stress effects, including elasticity, poroelasticity, and porothermoelasticity, et al.

(3) In our manuscript, we first calculate the pore pressure induced by fluid injection and discuss the fault slip potential associated with these pore pressure perturbations.

(4) In section 8.3, we also calculate the thermoelasticity based on thermally uncoupled solution (Cheng, 2016, Poroelasticity,Theory and Applications of Transport in Porous Media, Springer Nature), and discuss the effect of thermoelasticity on the fault slip potential on the mapped faults near the MTY EGS field.

(5) Our results suggest that the stress changes (1.25 MPa) with changes in temperature (by 6 °C during 20 years) have less influence on the faulting slip trendency than the direct pore pressure perturbations induced by fluid injection. Therefore, in our manuscript, we mainly

discuss the effect of pore pressure perturbations on the faulting stability in the MTY EGS field.

(6) Presently, preliminary hydraulic stimulation tests have been conducted with smaller injection rate, and there have been lack of observed induced earthquakes in the MTY EGS field. In the future, we will focus on the poroelasticity on the induced seismicity in the MTY EGS production at different depths.

2) It would be interesting if you will consider (and discuss) also other commonly accepted models to estimate the expected maximum magnitude (e.g., Shapiro et al. (2011), Van der Elst et al. (2016)).

Response 02: In our manuscript, by comparison, we find that the maximum magnitudes of the injection-related seismicity estimated with the Galis model are slightly greater than the values by the McGarr model. Besides, we will consider (and discuss) also other commonly accepted models to estimate the expected maximum magnitude (e.g., Shapiro et al. (2011), Van der Elst et al. (2016)) in our revised manuscript later.

Additional minor comment:

- At line 19 of the Abstract I suggest to substitute "Enhanced Geothermal Systems (EGS) field" with "Enhanced Geothermal System (EGS) field"

Response 03: We will modify this minor error in our revised manuscript later.