Solid Earth Discuss.,
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Solid Earth
Discussions

Interactive comment on "Rupture-dependent breakdown energy in fault models with thermo-hydro-mechanical processes" *by* Valère Lambert and Nadia Lapusta

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The article has been reviewed by two referees who both support the modelling effort in this study. Both underline that the study should be published after minor or moderate modifications. The clarity of the definition of fracture (breakdown) energy could be readily improved, in addition to the comparison with the quasi-steady-state solution given by previous studies. All the TP modelling work (as in the present study) use constant TP coefficeint, which makes the pressurization so efficient that tends to cause a nearly-complete stress drop (at least in the spring-slider model). I am wondering what could be the possible damping factor(s) for the TP process (e.g., a smaller TP

effect with decreaseing effective normal stress). Would these factors affect the fracture energy and the rupture process? This would need extra work, but it will be useful if the authors could at least comment on this.

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