EGU2020-11843
https://doi.org/10.5194/egusphere-egu2020-11843
EGU General Assembly 2020

On brittle-ductile strain localization

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The classification of the strain localization modes is attempted around brittle-ductile transition. The stresses are high. The are a number of suspects: earthquake-like thermal runaway (Braeck et al. 2009), stable sliding as shear heating zones oriented 45 degrees to the principal stresses (Kiss et al. 2019), brittle faults/shear bands oriented ca. 30 degrees to the maximum compressive principal stress and mode 1 fracture. The coupling to the porous fluid hydrology is accounted for. High resolution numerical simulations are compared to classical and newly derived composite asymptotic solutions.

References

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