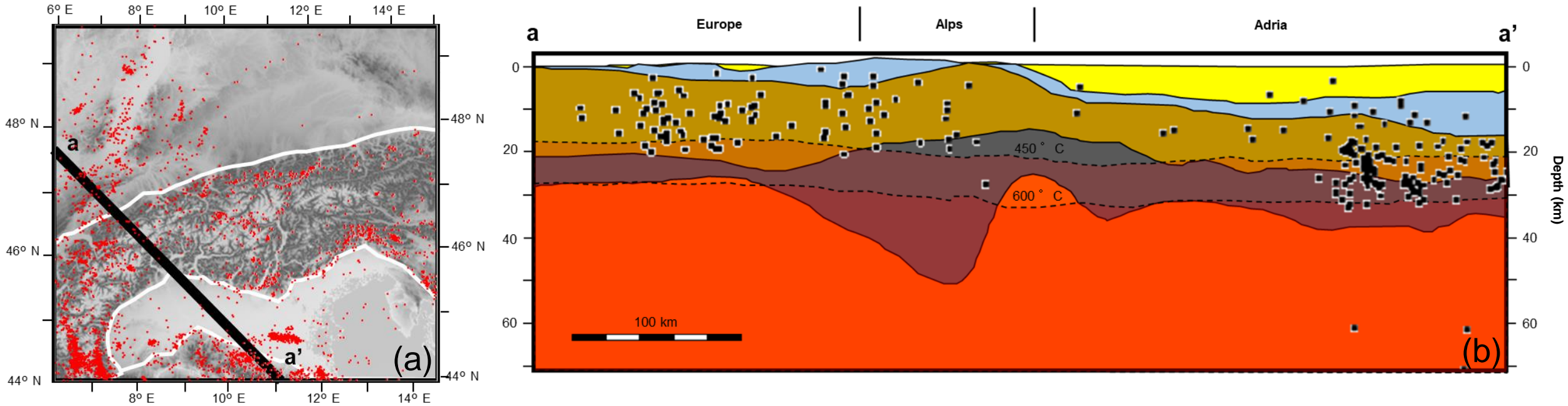


# The thermal field across the Alpine orogen and forelands and its relation to seismicity



EGU2020: Sharing  
Geoscience Online

Cameron Spooner, Magdalena Scheck-Wenderoth, Mauro Cacace, Hans-Jürgen Götze and Elco Luijendijk



Seismic events from the International Seismological Centre between Jan 2000 and Jan 2018 larger than moment magnitude 2 displayed on a map of the study area. b) NW-SE cross section through the structural model (Lithospheric mantle = red, lower crust = grey, upper crust = brown, consolidated sediments = blue, unconsolidated sediments = yellow) with seismicity lying within 20 km of the section plotted. Isotherms for 450° C and 600° C are overlain.

We find that seismicity in the European and Alpine crust terminates at 450° C whilst seismicity in the Adriatic crust terminates at 600° C. Assuming the maximum depths of seismicity represent the brittle ductile transition we infer that the bulk composition of the Adriatic crust is more mafic than the European crust, in line with previous gravity modelling work (Spooner et al., 2019).

- Spooner, C., Scheck-Wenderoth, M., Götze, H., Ebbing, J. and Hetényi, G., 2019. Density distribution across the Alpine lithosphere constrained by 3-D gravity modelling and relation to seismicity and deformation. *Solid Earth*, 10(6), pp.2073-2088, <https://doi.org/10.5194/se-10-2073-2019>