

It is well known that deformation and metamorphism interact with each other in the Earth. The nature of the interaction and - at the fundamental level - the link between stress and new mineral growth remain unclear. In recent years a number of strong but contrasting views have been expressed on how stress links to mineral growth, and the debate is on-going. Moreover deformation and metamorphism very often involve fluid flow and reaction, especially in the lithosphere. This is likely key to understanding earthquakes, slow earthquakes and ductile processes, but again the coupling between deformation, metamorphism and fluid flow is not fully understood. This session aims at exchanging views and fostering joint collaboration between various communities, spanning a range of settings from brittle crust to the lithospheric mantle. We welcome all contributions including structural geology/petrology/microstructures, laboratory experiments, numerical modeling, and seismology/geodesy. Better links between these disciplines, on scales from grains to the lithosphere, will energize current debates about these interactions.