

The co-evolution of fluids and deformation has a significant influence on the structure and properties of rocks in many settings. In the upper crust, this is exemplified by the challenges posed by fractured carbonate reservoirs. Compared to other types of reservoirs the characterization of carbonates is typically more complicated due to the different types of structural elements they may include. Fluid flow through fractures and brittle fault zones in any rock type may vary both spatially and temporally as a function of structural evolution. As a result, fluid sources, fluid rock interactions and chemistry may change with time altering the mechanical properties of fractures in the host rock.

This session is intended to provide a summary of latest research on the processes of carbonate embrittlement, faulting and fracturing in carbonate rocks, and related fluid interactions with carbonates and other host rocks. The goal is to bring together scientists working in the field, laboratory, and on simulations to provoke discussion towards improving our understanding of faulting and fracturing in upper crustal rocks as well as the role played by fault and fracture networks on subsurface fluid flow. We encourage contributions from all fields including structural geology, seismology, isotope geochemistry, and hydrogeology that seek to comprehend the co-evolution of fluid flow and deformation from the micro- to the macro-scale in a variety of geologic settings.