Associated Project 4

Stabilities and structures of stress driven phase transitions - influence on substructure dynamics

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a) Associated Project aims & objectives

The associated project "Stabilities and structures of stress driven phase transitions" deals with numerical modeling and in situ analogue experiments of solid-solid and solid-fluid phase transitions driven by stress. These models will be combined with the dislocation dynamic models within "Elle", which is one of the major aims of the CRP. Recent research within this associated project focuses on multi-scale surface roughening during dissolution-precipitation creep (development of Stylolites) and instabilities and structures during the solid-solid high-pressure phase transition olivine-spinel. For both processes subgrain structures and their dynamics are crucial. Models of high pressure phase transitions and the influence of heat release during the transition will be studied in in-situ experiments with a thermal camera to verify the numerical solutions.