

Interactive comment on “Rheological transitions in the middle crust: insights from Cordilleran metamorphic core complexes” by Frances J. Cooper et al.

B. Grasemann (Referee)

bernhard.grasemann@univie.ac.at

Received and published: 2 December 2016

I agree with the reviews and comments that the manuscript represents a well-written review of the rheological implications derived from structures exposed in three thoroughly studied metamorphic core complexes of the western USA. However, most of the ideas, concepts and partly also the excellent field pictures have been published by the same authors previously. The whole manuscript is more of a synthesis rather than original research and therefore the authors should make clear what the main contribution of this study is and how it is different from other papers previously published.

Besides this general statement I have some specific comments mainly related to Figures 5-7:

C1

Figure 5A: No orientation is given. SPO gives nice top to the right shear sense. Figure 5C: No orientation is given. Sigmoids and winged inclusions give nice top to the right shear sense. Figure 5D: No orientation is given. SPO gives nice top to the left shear sense. Figure 5F: No orientation is given. What is shear sense here? Figure 6F: This is not a delta-type porphyroclast inclusion but a winged inclusion. The mechanics of both structures is quite different and should not be confused. Figure 6F: Nice top right shear sense. Figure 6D and E: Superb examples but because these examples are brilliant everybody will remember that exactly these figures have been published previously. Figure 6D: This IS a delta clast. Figure 6E: This IS NOT a delta clast. Figure 6F: Shear sense here is opposite to all other pictures. Is this true? Why?

Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-135, 2016.