

Role of serpentine?

- Critical to questions 3 & 5, in addition to volatile flux
- Can be addressed by several thematic approaches
 - Geophysical studies of incoming plate
 - Geologic studies of exhumed mantle/crust sections
 - Experimental studies of serpentine stability
 - Identification of geochemical tracers

Devolatilization reactions

- This sub-question is underpinning for subduction studies
- MARGINS developed the theoretical framework - now there is general consensus that it's time to test with data
- Thematic approaches
 - Field studies of exhumed slabs (including sample repository/database development)
 - Laboratory experiments

Mass fluxes

- Fluxes of volatiles, melts and fluid-mobile elements all important
- Requires both large community experiment(s) of arc segments (encompassing 3-4 volcanic centers and everything in between) and thematic approach
- Primary sites
 - Cascadia (young hot subducted crust, continental plate)
 - southern WA; northern CA - could include focused study of Josephine
 - Section of Aleutian arc (older subducted crust, oceanic plate, shallow depth to subducted slab)

Mass fluxes

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- Thematic
 - forearc to backarc transects (Marianas)
 - improved geodynamic and petrologic models
 - exhumed mantle ophiolites (fluid transport questions)
 - experiments on fluid-melt-rock reactions
 - Tonga (coldest subducting plate in the world)