Title: ***A Tangled Web? Generation and transport of fluids, volatiles and melts in subduction zones from source to surface***.

Revised Session Description:

We seek to integrate multidisciplinary efforts to advance our understanding of the generation and transport of C-S-O-H-bearing fluids, volatiles and melts in subduction zones in space and time to further comprehend the deep volatile cycle and arc magma genesis. New geodynamic models and geophysical imaging techniques continue to improve our understanding of distribution of melts and C-S-O-H-bearing fluids in the mantle. Ground-truth evidence for these models and images is provided through geochemical, petrologic, geochronologic and field studies of the lavas erupted on the surface, and the mantle and crust from which magmas are derived and through which they must pass. Thus the tangled web of sub-arc magmatic and volatile cycling is opening to provide a sharper view. This interdisciplinary session invites submissions from geochemistry, petrology, geophysics, modeling, experiments and field geology that address the temporal and spatial evolution of the subduction outfluxes, evidence for sub-arc mantle wedge processes and geochemical exchange between the Earth’s reservoirs. We also welcome studies that explore the role of the forearc mantle wedge on the global geochemical cycle.

Conveners:

Primary: Julia Ribeiro, Rice University

Christy Till, Arizona State University

Leif Karlstrom, University of Oregon

Horst Marschall, Woods Hole Oceanographic Institution