Geophysical Research Abstracts, Vol. 7, 07318, 2005 SRef-ID: 1607-7962/gra/EGU05-A-07318 © European Geosciences Union 2005



Volatiles and fluids in subduction zones: climate feedback and trigger mechanisms for natural disasters. An overview of the activities of SFB 574.

T.J. Reston (1)

(1) SFB 574, IFM-GEOMAR, Wischhofstr. 1-3, 2418 Kiel, Germany (treston@ifm-geomar.de)

The special research program SFB 574 investigates the role of fluid and volatile recycling in subduction zones along the Central American convergent margin (Guatemala to Panama) through integrated geophysical, geological, geochemical, petrological and oceanographic studies performed by 12 focussed projects. During phase I (2001-2004), we have concentrated on a segment of the subduction zone system onshore and offshore Costa Rica and Nicaragua. Along this region, the dip of subduction, the nature of the incoming plate, and magmatic compositions along the volcanic arc are all known to change significantly. Data collected during a total 4 months of shiptime on RV SONNE and 3 months on RV METEOR, during 15 man-months of fieldwork in Costa Rica and Nicaragua and modelling studies over the past 3 years have greatly expanded and deepened our understanding of fluid migration in and out of subduction zones and of the trigger mechanisms and probability of occurrence of natural disasters. In Phase II (2004-2008) we will finish work off Central America, and start working in an accretionary segment of the Chile margin. Three main themes have arisen within the SFB: the importance of the input to the subduction system, the mechanisms of dewatering and fluid flow through the forearc, and the transfer of volatiles from the slab through the arc into the atmosphere. In this presentation I outline the main activities of the SFB and highlight some of the key results within these themes.