Geophysical Research Abstracts,
Vol. 10, EGU2008-A-00637, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-00637
EGU General Assembly 2008

First results of fission track thermochronology in the eastern Mesohellenic Trough (Greece)

A. Vamvaka (1,2), C. Spiegel (1,3), M. Danisik (1), W. Frisch (1), A. Kilias (2)

(1) Institute of Geosciences, Tuebingen University, Germany, (2) Dept. of Geology, Aristotle University, Thessaloniki, Greece, (3) Now at the Dept. of Geosciences, Bremen University, Germany (agnes_va@yahoo.co.uk / Fax: +49 7071 5059)

The Mesohellenic Trough (MHT) is developed parallel to Hellenide isopic zones, on the suture located between the Apulian microplate and the Pelagonian continental block. It comprises up to $\sim$4 km thick sediments of Middle Eocene to Middle-Upper Miocene age. In this study, we target the south-eastern part of the basin, where strata of all formations are exposed and paleocurrent indicators show that conglomerates were supplied from the eastern crystalline massif, i.e. the Pelagonian block. In order to constrain the low-temperature cooling history of the study area, we use apatite and zircon fission track thermochronology on samples from the sedimentary infill as well as adjacent basement rocks. We aim to investigate the sedimentary provenance in relation to the exhumation history of the Pelagonian block. Additionally, we want to test a possible thermal overprint of the Eocene sediments. Our thermochronological results together with structural data can lead to the better understanding of the geodynamic evolution of the basin. First apatite fission-track results confirm the Pelagonian massif as a source area of the detrital material of the Oligo-Miocene sediments. The cooling history of both the Eohellenic and Hellenic orogeny are reflected in the apatite ages.