Geophysical Research Abstracts
Vol. 12, EGU2010-8075, 2010
EGU General Assembly 2010


# Inferences for the Miocene to present evolution of the Anatolia Plateau south margin

David Fernández-Blanco and Giovanni Bertotti
Dept. of Tectonics, Vrije Universiteit, De Boelelaan 1085, 1081 HV Amsterdam, The Netherlands

The Miocene to recent Central Anatolia Plateau (CAP) is a first-order morphotectonic feature with high average elevations, low-relief dry interior and steep humid flacks. The ESF-sponsored Vertical Anatolia Movement Project (VAMP) aims at increasing the temporal and spatial resolution of plateau-building processes, using the CAP as a case study. Unravelling the tectonic history of its margins is essential. Our component of the VAMP strives to determine the subsidence-uplift mechanisms in the south margin of the Anatolia Plateau, structures responsible for, and age of growth of this margin, as well as achieve a quantitative understanding of the regional tectonics.
A common division of the study area, from north to south, is: (i) south part of the continental basins of Central Turkey, with Tuz Gölü Basin as the main representative, in the high flat area of the Anatolian Plateau, (ii) the arcuate Tauride fold-thrust belt and the Miocene Basins on top of it, forming part of the south flank of the plateau, (iii) offshore Cilicia Basin between Turkey and Cyprus, as the downward continuation of the south flank of the plateau, and (iv) the southward-thrusted Kyrenia Mountain Range and Circum-Troodos sedimentary succession. Miocene marine sediments in southern Turkey are presently found in Manavgat, Mut and Adana Basins. These sediments, possibly originally belonging to one single basin, are fundamental archives to constrain the tectonic stages immediately preceding and contemporaneous with plateau development. Miocene Mut Basin lies between Manavgat and Adana Basins, and is considered to have developed on a relatively stable area of Mesozoic Tauride basement, thus is a strategic area to solve the tectonic history that existed in southern Turkey since Miocene.
Three N-S regional geological sections from Mut Basin to Mesoaria Basin (north Cyprus) that reproduce the present relationships among the units of the area have been constructed. These sections show a pre-Cenozoic highly-deformed metamorphic basement with paleotopography, unconformably overlain by relatively undeformed marine Miocene sediments, and post-Miocene continental deposits. These Miocene deposits are uplifted at more than 2000m in Mut Basin and located at depths of more than 2500m in the Cilicia Basin, outcroping again in the Kyrenia ridge. Two main periods of differential tectonic activity are distinguished within the post-Eocene succession; Miocene, with subsidence of the whole area, and post-Messinian, characterized by uplift in the north, subsidence in the central transtensional domains and thrust activity and uplift in the Kyrenia Range.
In this contribution, using data from previous studies, a 3D visualization program and structural fieldwork techniques, we aim to determine the areal distribution and tectonic evolution of a Miocene basin that probably covered an area from Karaman to Mesoaria basins and from Antalya to Adana basins.