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Preliminary stratigraphic and paleomagnetic results from Neogene basins across the Anatolian Plateau (Turkey).

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An integrated paleomagnetic and stratigraphic study on Neogene basins across the Anatolian Plateau was carried out. This study is developed within the VAMP (Vertical Anatolian Movement Project), an interdisciplinary project aimed to the recent tectonic evolution of the central Anatolian Plateau. The studied areas are located in southern Turkey (Adana, Mut and Ermenek basins) and in northern Turkey (Kazan, Çankiri, Kastamonu, Boyabat and Sinop basins). For paleomagnetic analyses we sampled 1062 standard cylindrical samples from 13 stratigraphic sections, and 746 samples for paleontological analysis were taken from the same sections.
AMS (Anisotropy of Magnetic Susceptibility), magnetic mineralogy and paleomagnetic polarity data are presented together with the results of the integrated stratigraphic analyses.
In the Southern Turkey basins preliminary results show the diffuse presence of authigenic iron sulphides, together with magnetite, as main magnetic carriers. In these sections the iron-sulphides Characteristic Natural Magnetization (ChRM) component is characterized by inconsistent polarity record, suggesting that iron-sulphides have a late diagenetic origin. Conversely, magnetite bearing sediments show more reliable results in term of magnetic polarity interpretations.
Preliminary stratigraphic and paleomagnetic results from the southern margin of the plateau allow us both to refine the stratigraphy for the late Miocene of the Adana Basin and to better constrain the age of the youngest marine deposits of the Mut and Ermenek basins. In the late Miocene of the Adana Basin evidence of the Messinian salinity crisis led to a new stratigraphic framework specially for the Messinian-Pliocene interval. Thick fluvial conglomerates from the uppermost Messinian deposits of the Adana Basin, which could be linked to the activation of the southern margin of the plateau, allow us to constrain at about 5.4 Ma the uplift of the central Anatolian Plateau. On the other hand, the preliminary results of the micropaleontological analyses carried out on the higher marine deposits sampled in the northern part of the Ermenek Basin (Basyayla section, 1840 m a.s.l.) point to a post-Tortonian age for the plateau uplift. The age of the basins at the northern margin of the plateau are very poor constrained, except for that basins containing vertebrate-bearing continental deposits. However, from a palaeogeographic point of view, our preliminary data suggest a possible Tortonian connection between the Çankiri Basin and the Paratethyan realm.
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