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## Tethys Belt in the Anatolia-Caucasus-Black Sea Region: Basins, Magmatic Arcs, Ophiolites, and LIPs

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We interpret the paleotectonic evolution and structure in the Tethyan belt by analyzing magnetic data sensitive to the presence of iron-rich minerals in oceanic fragments and mafic intrusions, hidden beneath sedimentary sequences or overprinted by younger tectono-magmatic events. By comparing the depth to magnetic basement (DMB) as a proxy for sedimentary thickness with average crustal magnetic susceptibility (ACMS), we conclude:

(1) Major ocean and platform basins have DMB >10 km. Trapped ocean relics may be present below Central Anatolian micro-basins with DMB at 6-8 km and high ACMS. In intra-orogenic basins, we identify magmatic material within the sedimentary cover by significantly smaller DMB than depth to seismic basement.

(2) Known magmatic arcs (Pontides and Urima-Dokhtar) have high-intensity heterogeneous ACMS. We identify a 450 km-long buried (DMB >6 km) magmatic arc or trapped oceanic crust along the western margin of the Kirşehir massif from a strong ACMS anomaly. Large, partially buried magmatic bodies form the Caucasus LIP at the Transcaucasus and Lesser Caucasus and in NW Iran.

(3) Terranes of Gondwana affinity in the Arabian plate, S Anatolia and SW Iran have low-intensity homogenous ACMS.

(4) Local poor correlation between known ophiolites and ACMS anomalies indicate a small volume of presently magnetized material in the Tethyan ophiolites, which we explain by demagnetization during recent magmatism.

(5) ACMS anomalies are weak at tectonic boundaries and faults. However, the Cyprus subduction zone has a strong magnetic signature which extends ca. 500 km into the Arabian plate.