

Geodynamic and palaeoclimatic evolution of the Caspian Sea: Paratethys restriction during Maikop and Productive Series

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The retreat and restriction of the Paratethys Sea, once extending from Central Europe to China, had a major impact on the past ~40 million years of the Eurasian climate and environment. The continental collision associated with the rising of the Alpine-Himalayan mountain chain caused this Paratethys to evolve from open oceanic into restricted marine and, ultimately, in lacustrine environments.

Restricted circulation generated three kilometres of black mudstones deposited under anoxic conditions (known as Oligo-Miocene Maikop series) in the Black Sea and South Caspian Basin, source of one of the biggest oil reserves in the world. Even more restricted circulation resulted in the accumulation of several hundred metres of deltaic deposits in the South Caspian Basin during the Mio-Pliocene interval, the so-called Productive Series.

Here, we present the first paleomagnetic results on a pilot study on the Eocene-Oligocene boundary interval in the Talysh region, as well as those of a magnetostratigraphic and biostratigraphic study of the Productive Series in the Baku region.

The preliminary Talysh results show that in general the Eocene basalts and volcanic derived sand- and siltstones give a paleomagnetic signal that warrant a more detailed paleomagnetic study, while the more shaly lithology has a very weak paleomagnetic signal.

The pilot results on Upper Productive Series in Loc Batan section reveal an excellent paleomagnetic signal carried mostly by Fe oxides (magnetite) and rarely by Fe sulphides (greigite). The sampled interval is 480 m long and the obtained polarity pattern records three reversals of the Earth magnetic field. The preliminary results indicate a high sedimentation rate of this series. New age constraints are expected from the intercalated ash layers, currently being processed for

⁴⁰Ar/³⁹Ar dating.