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ABSTRACT BOOK

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Evidences for a Late Cretaceous continental arc in the central Pontides: new insights on alternative geodynamic reconstructions for the Neotethys in northern Turkey

Ellero A.¹, Ottria G.*¹, Sayit K.², Catanzariti R.¹, Frassi C.³, Göncüoğlu M.C.², Marroni M.¹⁻³ & Pandolfi L.¹⁻³

¹ Istituto di Geoscienze e Georisorse, Consiglio Nazionale delle Ricerche, Pisa

² Department of Geological Engineering, Middle East Technical University, Ankara, Turkey

³ Dipartimento di Scienze della Terra, Università di Pisa

* Corresponding email: ottria@igg.cnr.it

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In the geodynamic evolution of Turkey, the North Anatolian Shear Zone (NASZ) plays a key role, representing a long-lived crustal scale strike-slip shear zone that coincides with the Intrapontide Suture Zone (ISZ), originated by the closure of the Intrapontide ocean that with the Izmir-Ankara-Erzincan ocean belongs to the Neotethyan realm in the Anatolia region. The NASZ dismembers the nappe stacking formed by the continental collision between Istanbul-Zonguldak and Sakarya terranes with Eurasian affinity, generating a complex tectonic setting where tectonic units with different geodynamic meaning are juxtaposed. The identification inside the fault-bounded blocks of tectonic units belonging to the nappe stacking represents the first step for a correct interpretation of the orogenic belt as they can act as markers of the deformation history. In this contribution, we present the results of a multidisciplinary study that allowed the definition of a new tectonic unit that can be used for deciphering the geodynamic evolution of the Neotethys in northern Turkey.

This unit outcrops in elongated blocks comprised in the mountain range between Tosya and the northern boundary of the Çankırı Basin. The unit is formed by three formations, from the bottom:

i) the Basal Volcanic Complex, including basalts to basaltic andesites, interrupted by a confined and brief episode of calcarenite deposition. The geochemistry points to an active continental margin setting as evidenced by the enrichment in Th and *LREE* over HFSE, and by the relative enrichment in Nb compared to N-MORB;

ii) the Volcanoclastic Sandstone Formation, including breccias and turbiditic sandstones, fed by a mixed carbonatic-volcanoclastic intrabasinal source area, represented by the reworking of the volcanic rocks and coeval carbonate platforms;

iii) the Marly-calcareous Turbidite Formation, derived from a continental margin source area that starts to influence the mixed carbonatic-volcanoclastic intrabasinal component.

The age of the sedimentary cover is constrained by the nannofossil assemblages to the Late Santonian-Middle Campanian (CC17-CC21 Zones).

Therefore, the trace element systematics of the volcanics and the petrographic characteristics of the sedimentary succession point to an origin of the studied unit from an active continental margin. This active continental margin could be located in three possible alternative geodynamic settings within the Neotethyan realm, depending on whether it is related to the closure of Izmir-Ankara-Erzincan or Intrapontide oceans. In the first hypothesis, this unit could belong to the southern or northern Sakarya margins. Alternatively, in the second case, the unit could be restored on the southern margin of Istanbul-Zonguldak terrane.