

# Age of the metaophiolites in the Eastern Rhodope Massif: Prototethys vs. Paleotethys connection

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## Background and Results

Ultramafic-mafic metaophiolitic bodies are widespread within the Rhodope Massif [1]. Their unclear magmatic age referred to as Precambrian [1], Late Devonian [2] and Late Permian [3] hampers establishing metaophiolite geodynamic significance to the Tethyan oceans. We report on U-Pb LA-ICP-MS zircon crystallization age of a metamafic rock connected to Kazak metaultramafic body of the eastern Rhodope Massif in Bulgaria. The metamafic rock is a garnet-bearing amphibolite intercalated within the metaultramafic body. The amphibolite geochemistry indicates a high Fe-Ti and a low-K tholeiitic affinity gabbroic protolith. Dated zircons show oscillatory and homogeneous zoning patterns, with Th/U in the range 0.16-1.31 characteristic of magmatic origin. Two out of 25 zircons analyzed from the garnet-amphibolite yielded a concordant age of 298.1±6.2 Ma for magmatic crystallization of the protolith. In addition, zircon antecrysts are aged in the range from 314.4 Ma to 311.6 Ma and zircon xenocrysts have ages from 513.5 Ma to 404.8 Ma.

## Discussion of Results

Recently, Liati *et al.* [3] have linked the metaophiolites to the Paleotethys Ocean, while Peytcheva *et al.* [2] have related them to the Rheic Ocean (Prototethys) or Paleotethys Ocean. The growing wealth of Permian magmatic crystallization ages for the metaophiolite bodies, including this study, strongly suggests Paleotethyan oceanic lithosphere hidden within the Rhodope Massif.

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[1] Kozhoukharova (1984) *Geol.Balc.* **14**, 9-36. [2] Peytcheva *et al.* (2018) *Compt.Rend.Acad.bulg.Sci.* **71**, 1657-1664. [3] Liati *et al.* (2011) *UHP metamorphism 25 years after the Discovery of Coesite and Diamond*, Elsevier, 295-324.