Stratigraphic correlation of the Permian-Triassic red beds constrained by detrital zircon geochronology: Moscow basin, East European platform

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There’s no doubt that nowadays detrital zircon U-Pb geochronology is actually required method of sedimentary basins analysis. Furthermore, this approach may have a lot of applications, such as a stratigraphic correlation. Here we present the first results of U–Pb LA–ICP–MS dating of detrital zircon from the Permian-Triassic red beds located within the Moscow Basin of the East European platform. Two outcrops have been studied: the Zhukov Ravine P/T boundary reference section and the Nedubrovo strata with uncertain stratigraphic position (uppermost Permian or lower Triassic?).

U–Pb ages of detrital zircon grains have been obtained for two samples – the Upper Permian and Lower Triassic age, which were taken in the proximity to the Permian–Triassic boundary in the Zhukov Ravine. Corresponding age distributions show contrasting provenance of the studied sedimentary rocks, pointing out that principal change in source of clastic material occurred on the Paleozoic-Mesozoic boundary. It means that detrital zircon U–Pb geochronology can be used as an additional independent tool for stratigraphic correlation of the Permian-Triassic red beds, at least within the Moscow Basin. We demonstrate this in the case of the Nedubrovo section with debated (Permian or Triassic?) stratigraphic position: the obtained data on detrital zircons persuasively suggests Early Triassic age of the Nedubrovo strata.

This study is supported by the Russian Foundation for Basic Research (project no. 18-05-00593).