



Detrital zircon geochronology and provenance of the Neoproterozoic to Cambrian strata of Central part of Moscow syncline (East European platform)

Anna Ivleva, Victoria Ershova, Elisaveta Vasil'yeva, and Sergey Sychev

St Petersburg University, Institute of Earth Sciences, Regional Geology, Russian Federation (a.ivleva@spbu.ru)

Here we present result of detailed studies of wells drilled in the central part of Moscow syncline within the Central Russian aulacogen (Orekhov graben). The oldest sedimentary strata of the Moscow syncline are presumably the Mesoproterozoic to the early Neoproterozoic in age and are represented by a red sandy-clayey deposits filling in grabens. The source area of clastic grains from these oldest deposits was local; the ages of detrital zircons correspond to the age of the neighboring domains within basement of the East European Platform and are grouped into two main peaks around 2500-2700 and 1700-2000 Ma. Grains with age about 1500 and 1000 Ma are subordinate. The presence of grains of these ages limits the age of sedimentation by earliest Neoproterozoic.

The overlying sedimentary strata are Ediacaran –Cambrian in age and mainly comprise silty mudstones with subordinate beds of sandstones. The sedimentation of Ediacaran rocks marked the beginning of deposition of sedimentary cover of EEP and Moscow syncline particularly. Detrital zircons from latest Ediacaran- Earliest Cambrian strata of Orekhov graben grouped at several major peaks - 2500–2700 and 1700–2000 Ma corresponding to the age of EEP basement and 1000–1500 and 530–900 Ma pointing to Sveconorwegian and Timanian source of clastics.

The obtained data on the age of zircons from the Neoproterozoic-Cambrian sediments of Orekhov well correlate well with the previous research from northern margin of EEP pointing that major change in source of clastic occurred in Late Ediacaran when Timanian orogen became the main source of clastic in the EEP.

This work was supported by the Russian Foundation for Basic Research (Grant No. 18-35-00407).