Contribution ID: **462** Type: **Poster**

The study of volume distribution of mineral grains in deep-seated rocks from the Kola Superdeep borehole by neutron radiography and tomography

Today a topical issue is a rational use of earth's resources and respect for the nature preservation. To understand these questions it is necessary to have knowledge about the composition, structure and processes of the evolution of the Earth. An effective method of obtaining information about the Earth's past, especially about the environmental changes in the geological past, is a scientific drilling deep and superdeep wells. One of the wells, which were drilled to explore the deep structure of the Earth, is the Kola Superdeep Borehole. It was drilled on the northwest part of the Kola Peninsula (Russia) on the Baltic Shield and was reached a great depth of 12262 m.

In the present work, we investigated the Proterozoic and Archean rocks exposed from the Kola Superdeep borehole, by means neutron radiography and tomography. The radiography and tomography experiments have been performed on experimental station placed on the 14th beamline of the high flux pulsed reactor IBR-2.

From a set of angular projections were reconstructed three-dimensional models of the studied objects. Geometrical measure (shape, volume, equivalent diameter, and orientation angle) of the grains of rock-forming minerals were calculated. Correlation the relationship of mineral composition and grain orientation depending on the well depths were done based by experimental data.

Primary author: NAZAROV, Kuanysh (JINR)

Co-authors: Mr RUTKAUSKAS, Anton (Joint Institute for Nuclear Research); Dr SAVENKO, Boris (Joint Institute for Nuclear Research); Mr LUKIN, Evgeny (Joint Institute for Nuclear Research); Dr KICHANOV, Sergey (Joint Institute for Nuclear Research)

Presenter: NAZAROV, Kuanysh (JINR)

Track Classification: Applied Research