



Russian State Leveling Network (present and future)

Elena Mazurova (1), Sergei Kopeikin (2), and Aleksander Karpik (3)

(1) SSTUGT, Physical Geodesy and Remote Sensing, Novosibirsk, Russian Federation (e_mazurova@mail.ru), (2) Department of Physics and Astronomy, University of Missouri, Columbia, USA (kopeikins@missouri.edu), (3) SSTUGT, Geodesy, Novosibirsk, Russian Federation (rector@ssga.ru)

In August 2016 the sixth session of the United Nations Committee of Experts of Global Geospatial Information Management (UN-GGIM) endorsed the roadmap for the development of a Global Geodetic Reference Frame (GGRF) and urged countries to join efforts for its creation.

In response to the UN appeal in this article describes the current state of the high-precision Leveling Network in Russia and prospects of its development. In this paper, we consider projects related to the construction of new high-precision leveling lines by the classical methods, as well as issues of creating high-precision leveling network, associated with the development and implementation of a fundamentally new method of determining heights in geodesy - chronometric leveling based on the application of quantum metrology of time and the fundamental laws of general relativity.

Keywords: leveling network, chronometric leveling, quantum metrology of time, the general theory of relativity.