



## **Exact modeling of the relativistic geoid**

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Nowadays, a consistent relativistic approach to further development of Global Navigation System becomes vitally important. In many cases theoretical and experimental methods of geophysics and geodesy are inconceivable without taking into account relativistic corrections. So far, relativistic geodesy was based on the post-Newtonian approximation of general relativity. In this paper we make the next step and introduce an exact concept of the relativistic geoid in general relativity that is not limited to the first post-Newtonian approximation. Theoretical formulas for estimation of relativistic geopotential differences are given. The paper also derives relativistic Bruns' formula.

Key words: relativistic geoid, relativistic Bruns' formula