

Elena Mazurova
Moscow State University of Geodesy and Cartography

Corrections for Ellipsoidality

Abstract

Most of the formulae of physical geodesy are based on spherical approximation. Increasing accuracy requirements lead to the necessity to take into account the effects related to the ellipsoidality of the reference surface.

Now GNSS-technologies make it possible to reliably calculate the gravity disturbance δ_g which is the function of the geodetic coordinates B, L, H defined from satellite measurements.

The paper discusses the derivation of ellipsoidal corrections which are applied to the gravity disturbance. The use of these corrections allows the disturbing potential to be calculated to the accuracy of the order of the flattening, with spherical approximation being the main term.

Keywords: Corrections for Ellipsoidality, gravity disturbance, disturbing potential.