**"Gyroskopiya i Navigatsiya" №2, 2006**

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| **N.V.Drobyshev, V.N.Koneshov, I.A.Papusha, M.Yu.Popelensky, Yu.E.Rozhkov** | **Rcurrent algorithm using gravimetric survey data for vertical deviation definition, based on stochastic approach** | **75** |
| Global models of the gravitation field are necessary for solving problems intended for large Earth areas. Global models of the gravitation field make it possible to achieve accuracies of altitude and geoid altitude abnormalities satisfying many applications. Plum deviation error is too large for geodetic applications. Error analysis shows that the only way to increase the accuracy is to use data with higher resolution, i.e. the gravimetric survey data.The proposed method for vertical deviation calculation is based on the stochastic approach. This approach proceeds from the assumption that gravity abnormalities are stochastic variables with zero expectation. At that the abnormal field of gravitation is the uniform and isotropic field with known stochastic characteristics specified by covariance functions. Undoubted merits of this method are possibility of using iterative procedure making possible processing data obtained on vast areas and possibility of operating with different types of data particularly with aero gravimetric survey data carried out at different altitudes.The traditional and proposed methods are compared at calculations of vertical deviations for the Eastern part of the Black Sea and Southern part of Ladoga Lake. |  |

**Proceedings of 8th Conference of Young Scientists
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