

水準測量路線に沿った重力データにたいする多項式回帰モデル

Polynomial Regression Model for gravity data along a Levelling Route.

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A method for estimating the degree of polynomial fitted to gravity data is presented. Under the hypothesis that a polynomial surface adequately models the regional field, and noting that unique height value determinations can be made only by taking into account the convergence and irregularities of the equipotential surfaces of the Earth's gravity field, the polynomial values are used to check the close errors in levelling loops. The technique is applied to observed gravity and spirit levelling values obtained in the Chubu District which slopes towards the Japan Sea.

A method for estimating the degree of polynomial fitted to gravity data is presented. Under the hypothesis that a polynomial surface adequately models the regional field whose smoothness is controlled by polynomial order, a method is proposed to supplement spirit levelling results with gravity values. And noting that unique height value determinations can be made only by taking into account the convergence and irregularities of the equipotential surfaces of the Earth's gravity field, the polynomial values are used to check the close errors in levelling loops. The technique is applied to observed gravity and spirit levelling values obtained in the Chubu District which slopes towards the Japan Sea, and with an average elevation of about 600 m above sea level.