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 a 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 surface of the earth's gravity field, the polynomial values are used to check the closing 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.