



Error Distribution in regional Modelling of Potential Fields from Satellite Data

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Modeling of potential fields is a major task in geophysics. Often the available data are not distributed globally over the Earth and the need for regional or local modeling arises. In these cases it is necessary to have a clear knowledge of the errors resulting from the incomplete data base and their distribution in space in order to estimate the reliability of the modeled features. This work pursues the question how inversion errors in regional modeling using satellite data are distributed depending on the size of the data region, satellite height, noise level and minimum wavelength present in the data. We show the limitations of regional modeling and give estimations of the boundary width needed in order to achieve a certain accuracy in the model region. We compare examples of regional modeling to our predicted error distribution to decide about the significance of modeled features.