



High-order Radial Derivatives of Gravity Disturbance

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The radial derivatives of gravity disturbance and gravity anomaly are useful for dealing with the gravity gradient and the downward continuation. In this paper as high as ninth order radial derivatives of gravity disturbance (or gravity anomaly) are developed, starting with the deduction to the derivations of the high order radial derivatives of a harmonic function. And a case study is made for the application of the derived formulas to the downward continuation of gravity disturbances.