Testing the application of the Truncation Filtering Methodology in interpreting real gravity data: the Kolárovo gravity anomaly

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A b s t r a c t : Here the Truncation Filtering Methodology (TFM) designed for interpreting synthetic gravity data generated by point masses is applied to real gravity data for the first time. It is used here to interpret the Kolárovo gravity high. The DZ truncation sequence produced by truncation filtering the Kolárovo gravity data displays a dynamic pattern very much like the dimple pattern produced by a point mass. The dimple pattern is interpreted in terms of a point mass generating the Kolárovo high. Assuming that the high is produced by a compact anomalous body, such point mass approximately represents the center of mass of the body. It is determined by us from the onset of the dimple pattern at the depth of 8.7 km. Other independent interpretations by various authors, included in the paper, result in suggesting the depth of the center of mass of the anomalous body generating the Kolárovo high at 9.5 km. This test application of the TFM indicates, that the TFM designed for interpreting gravity data generated by point masses may be successfully applied to interpreting gravity highs or lows that are fairly isometric, in order to estimate the centers of mass of anomalous bodies generating the highs or lows, suppose such bodies are fairly compact.

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