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重力和重力梯度数据三维相关成像

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3-D correlation imaging for gravity and gravity gradiometry data

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摘要

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摘要 本文提出了重力异常三维相关成像方法和重力梯度数据三维相关成像方法, 并提出了基于异常分离的三维相关成像方法来提高成像分辨率. 通过合成Y型岩脉模型和合成多个直立长方体组合模型的重力异常和重力梯度数据试验分析, 验证了本文三维相关成像方法可显示出异常地质体的空间赋存状态和等效剩余质量分布, 具有良好的纵向和横向分辨率.

关键词 重力异常, 重力梯度数据, 三维相关成像, 基函数

Abstract: We propose the 3-D correlation imaging for gravity anomaly and for gravity gradiometry data. We also propose to use the 3-D correlation imaging based on anomaly separation to improve the imaging resolution. The test with the gravity anomalies and gravity gradiometry data of the synthesized Y-type dyke and multiple rectangular prism models shows that the method can image the spatial extension states and the distribution of equivalent excess masses of anomalous geological bodies with high resolution both longitudinally and transversely.

Keywords Gravity anomaly, Gravity gradiometry data, 3-D correlation imaging, Basic function

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