Visualisation of a Full Tensor Gradient Gravity Survey

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Full tensor gradient (FTG) gravity surveys measure the second spatial derivatives of the Earth's gravitational potential field. Such variations in the gravitational field may be due to the presence of bodies of higher or lower density relative to the surrounding rock. FTG data contains five independent components, hence effective visualisation of this data is advantageous for efficient human interpretation of the data. This image is a visualisation of an FTG survey (the black areas lay outside the survey area). The fibre orientations in the texture represent the orientations of principal curvature of the gravitational field, resulting from geological structures; the fibre thickness corresponds to the curvature magnitude about that orientation. A colourmap is applied to highlight linear features (using the red and green channels) and rotationally invariant features (blue channel), which assist in interpreting the underlying geology. This approach combines all components of the FTG in a single image to provide an intuitive interpretation of FTG data.

