

Using FALCON Airborne Gravity Data for Oil and Gas Exploration

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Abstract

In recent years, airborne gravity gradiometry has gained popularity as a useful tool for all stages of oil and gas exploration. It is able to be acquired rapidly, cost effectively and provide complete coverage of exploration blocks. When combined with seismic, magnetic, well and other geological data, significant advances in the understanding of the geology of a project area can be made. In a variety of geological environments, gravity anomalies resulting from density contrasts contain useful information about the distribution of rocks in the subsurface. Lithologies with atypical densities include carbonate, salt and volcanic rocks. These lithologies are good targets for gravity gradiometry but are often difficult to resolve with seismic meaning gravity gradiometry can complement and add value to new or existing seismic surveys. Transfer faults oblique to seismic lines are often difficult to identify on seismic lines but are obvious on gravity gradient data. Gravity gradiometer surveys are often used to interpolate structures between widely spaced 'vintage' 2D seismic lines and assist in more effective planning of new seismic surveys.