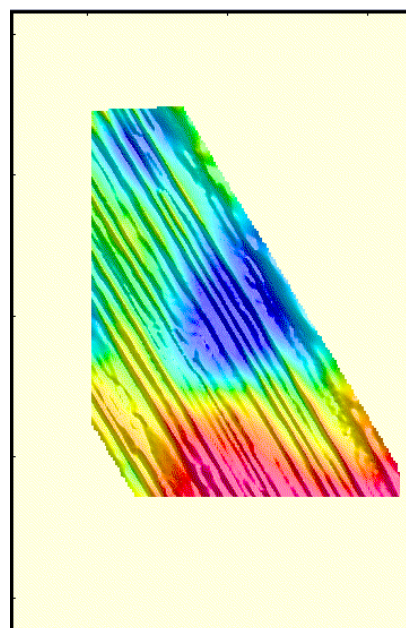


TIE-LINES ON 3D GRAVITY & MAGNETIC SURVEYS

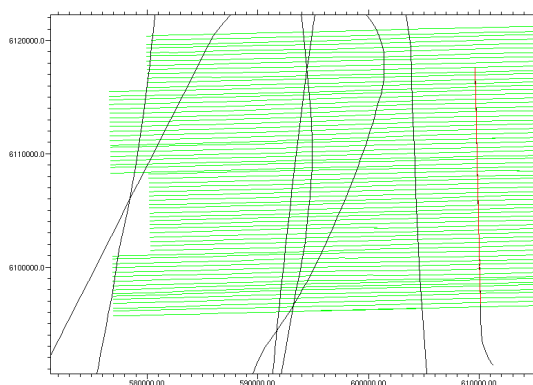
Tie-lines, where data is acquired along survey lines (ideally) orthogonal to the sail line direction, are required in order to accurately level potential fields data. By statistical analysis of the differences between the anomalous fields on the sail and tie-lines (the misties) it is possible to minimise errors in gravity data due to meter drift, vessel (and therefore gravity meter) height variations due to tides and bunkering, and also any level shifts due to the Eötvös effect. For magnetic data, mistie analysis enables additional corrections for any residual diurnal effects.

Without tie-lines, effective network adjustment (levelling) of the data is not possible and the final grids may exhibit line-to-line level shifts as shown opposite.

Because tie-lines are not required for the seismic program, the cost of their acquisition is an item that always requires consideration.



3D gravity data without levelling



Example of off-line data (shown in black) used as additional tie-lines

Although the acquisition of dedicated tie-lines is a preferred option, as Fugro-LCT record data on a continuous basis it is often possible to use “offline” data recorded during transits, time-share, seismic maintenance work or weather downtime. Although not all such data will be suitable, Fugro-LCT offers on-going processing to rapidly assess the quality of any such data.

It may also be possible to use existing data, perhaps from a previous 2D survey in the area, to level the new data.

During the survey planning stage Fugro-LCT can offer advice on the tie-line options available.

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