



## **Enhancing the scientific value of NGDC marine magnetic data**

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The NGDC marine magnetic survey archive, has been acquired over many decades, covers most marine parts of the planet in varying spatial density and has been generally under used due to its non integrated state. As part of an oil industry sponsored study GETECH is undertaking a '*Global Continental Margin Magnetic Study*' which is a sequel to its successful '*Global Continental Margin Gravity Study*', in which GETECH reprocesses all the Geosat and ERS-1 GM altimetry data for all the ice-free continental margins. This gravity study area extends from the coast to ~500 km offshore resulted in a high resolution (down to 10 km, 3 mGal) 1 minute gravity and bathymetry grids.

Various attempts have been made to spatially integrate the NGDC data (e.g. DNAG, NAMAG 2003 for areas about North America, CCOP for S E Asia) but as will be shown all suffer from the inability to eliminate ship track artefacts that generate significant 2D features that obscure much of the underlying geological signal. To overcome this problem significant low pass filtering has been often applied to the final gridded data. In our compilation, the highest frequency content of the ship track data is preserved. To achieve this requires careful, and time consuming, reformatting and editing of the ship track data and applying GETECH's proprietary micro levelling method which outperforms other micro levelling methods to generate a seamless spatial data set in areas of sufficient spatial data coverage. Examples will be shown from the Gulf of Mexico, Caribbean, Atlantic and S. E. Asia.