

Spatial & Time Series Filtering

Options for a profile of potential field tensor data.

- i) Treat as a time series
- ii) Treat as a 3D spatial signal
- iii) Treat as a 4D time and space signal

What techniques can we use to practically deal with maximising the signal and damping the noise?

FFT Options

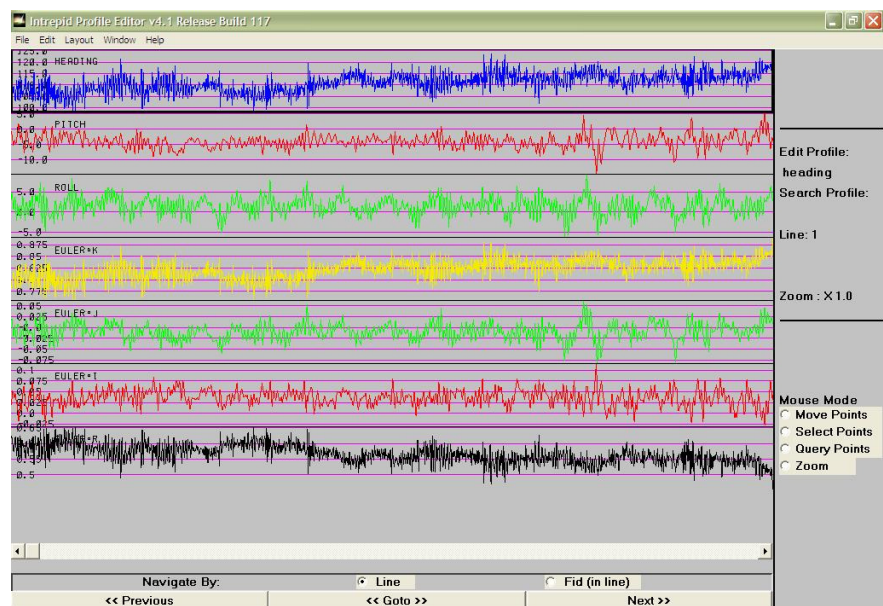
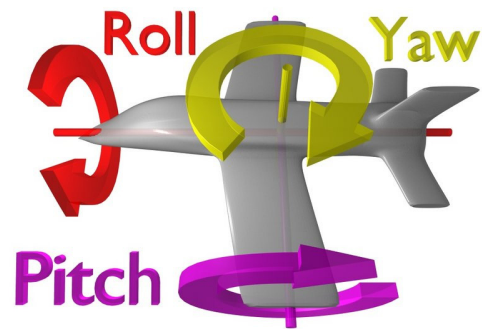
A complex tensor is used to carry the Fourier coefficients – this has involved a minimum of 5 FFTs. A new formulation separates the signal into the magnitudes (eigen values) and rotations to achieve the equivalent FFT with just four complex FFTs. (The amplitude phase approach)

3D Spatial Option

A local spatial least squares fitting of a truncated fourier series to estimate Observed Potential Field tensor data

Filtering

A “whole of tensor” approach to design filters. With the discovery of non-commutative arithmetic having a role in tensor algebra, this is appropriate to avoid processing errors.



For more Information