

INTERPRETATION USING EXPLICITLY ENCODED PHASE, AMPLITUDE AND FAULT DATA

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Current horizon interpretation techniques are based primarily on the use of seismic reflectivity. While there have been robust algorithms developed to work with seismic data, there are limitations and trade-offs with each of these approaches.

In this presentation we investigate the merits of interpretation based on the use of a colour blend comprised of phase, amplitude and fault datasets. The colour blend used in this workflow is a Hue-Saturation-Value (HSV) blend. In this blend the hue/colour is controlled by the instantaneous phase, the saturation is controlled by the amplitude, and the value/blackness is controlled by a fault detect volume.

Combining these three datasets provides a greater level of explicit information when interpreting an event. In standard cases this information can be inferred by the interpreter using secondary attribute volumes, or an autotracking algorithm performing extra calculations in the background. However, both of these approaches add extra overhead to the work being performed, reducing efficiency. Explicitly encoding phase, amplitude and fault information allows:

- Reduced incidence of cycle skipping
- The ability to pick on a particular phase angle
- Honouring of faults in autotracking
- Increased visual information in manual interpretation

These points will be reviewed through the interpretation of a number of 3D seismic datasets, with varying data quality and covering a range of geological settings.