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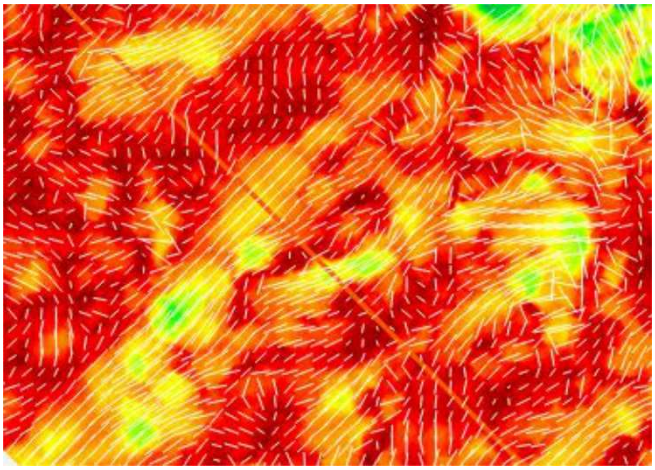
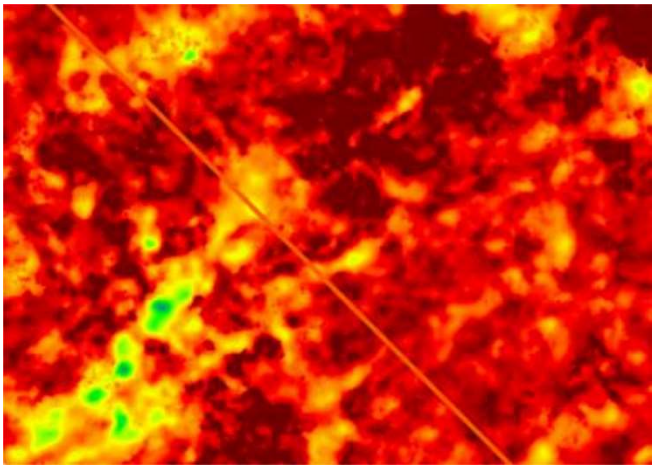
Fracture Detection

Via Azimuthal Analysis

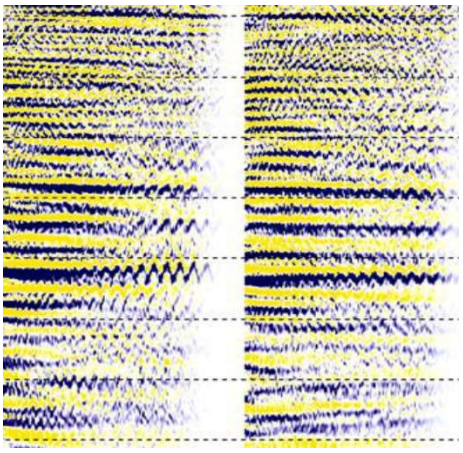
Seitel offers a suite of anisotropic analyses that provide more accurate and detailed representations of structural complexities. Fracturing causes directionally based variations of amplitude and velocity. By maintaining amplitude and azimuthal information through our processing sequence, HTI analysis can be performed to describe, map and correct for the azimuthal anisotropy. The fracture density (Delta Alpha) and direction attributes highlight the fracture distribution.



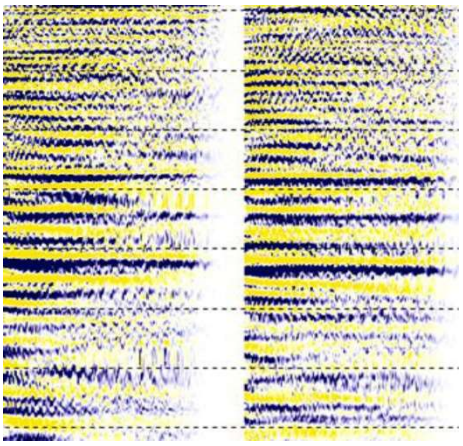
VVAZ - Delta Alpha Effective / Fracture Direction Vector Map Overlain, extracted from Austin Chalk



AVAZ – Anisotropic Gradient extracted from Austin Chalk



ES360 Depth Gathers



HTI Corrected Gathers

Gather Input Options

- Kirchhoff Time Migration (5D spoke / OVT)
- Kirchhoff Depth Migration (5D spoke / OVT)
- Full Azimuth Depth Migration (EarthStudy 360)

Horizon and Volume Attribute Products

- Amplitude Extracted Attributes (AVAZ)
- Velocity Extracted Attributes (VVAZ)

Applications

- Azimuthally Corrected Gathers
- Improved Stack Response
- Fracture Analysis and Detection
- Local Attribute Maps
- Orthorhombic Depth Migration