Getting More From Potential Fields: Examples From the Permian Basin and Mexico Using Euler Angle Stack Imaging

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Short Abstract:
Potential fields provide a cost-effective way to explore for oil and gas, and is especially useful in looking at large areas. Euler deconvolution is an established algorithm to extract features from potential fields. We use an enhancement to the conventional Euler deconvolution process to identify lineaments typically associated with faults, fractures, etc. Designated EASI for Euler Angle Stack Imaging, this tool has been effectively used in many areas around the world, both with high resolution surveys and with large regional data grids. EASI provides a much cleaner set of lineaments with less noise and better resolved orthogonal faults than conventional Euler deconvolution. We look at some established structures, including the Chicxulub impact site, existing oilfields, and potential new exploration areas in Mexico and the Permian Basin to see what this process can reveal using public domain gravity and magnetic grids.