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Rock Compaction Fault Displacement Evidence from Analysis of Sub-Parallel Subsurface Strata

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Abstract

Sedimentary units often show compaction variation across fault blocks resulting from jarring vertical shortening; a common occurrence in growth fault system innate to the Niger Delta. Rock displacement traceable on slip surface with varied dip was mapped on 3D seismic data. Interpretation done on available well logs reveal existing zones of sand formation that fairly correlates with compaction patterns seen on seismic lines across fault blocks with reference to vertical deviations in horizons across fault planes. These anomalies were stochastically analyzed for its topology effects using Density logs from the field in an attempt to ascertain the influence of rock strata on fault displacement and how this translates to compaction patterns. It was discovered that the effect of differential compaction propelled by wobbly underlying rocks primarily drives the local complexities imaged on the seismic data as varied turgid deformation zones also prolific from computed seismic attributes.

Keywords:

[artificial intelligence](#), [fluid dynamics](#), [log analysis](#), [fracture characterization](#), [variation](#), [rock compaction fault displacement evidence](#), [reservoir characterization](#), [structural geology](#), [seismic data](#), [correlation dimension](#)

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