

**Title:**

A hybrid approach for salt dome delineation within migrated seismic volumes

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**Summary:**

The Gradient of Texture (GoT) can detect subtle changes in the texture of the seismic data along the boundary of salt domes even in the absence of strong reflections, whereas Phase Congruency (PC) can highlight small changes in images of varying illumination and contrast using congruency of phase in Fourier components. In this paper, we propose a hybrid feature, which combines the advantages of both GoT and PC and leads to improved subsurface structures delineation in migrated seismic volumes. This paper outlines the work flow for salt domes delineation which can be modified to capture other geological structures in Earth's subsurface as well. The subjective and objective evaluation of the experimental results on the real seismic dataset from the North Sea, F3 block show that the proposed method outperforms the state of the art methods for salt dome delineation.