

Integration of Geologic Data into Structural Imaging of the Andean Subthrust, Peru

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Abstract

The prospectivity of the subthrust structures in the Ucayali basin, Peru, has exploration uncertainty resulting from the velocity structure in the hanging wall of the overthrust. Given the structural uncertainty and the under-constrained velocity model in this complex-structure environment, we decided to reprocess the lines through to anisotropic depth migration. Geologic constraints not used in the original models, resulted in improved imaging of the subthrust features. Through the model testing, we observed that the closure on the subthrust prospects are robust even with a less optimal velocity model. With a depth-migration velocity model that is consistent in 3D across the grid of 2D lines, and a geologically constrained velocity model, we have increased confidence in the mapping of the subthrust structures.