

Interpretation of a Sub-Surface Lateral Ramp in the Southern Canadian Rocky Mountains of Southwest Alberta by 3D seismic interpretation: Preliminary Report

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ABSTRACT

This study is part of the Fold-Fault Research Project's on-going investigation of tear-faults and lateral ramps. A lateral ramp is a ramp in a thrust surface that strikes parallel to the direction of transport. These structures have been found in the Canadian Rocky Mountain Foothills and the number of known examples is increasing as more seismic surveys are being performed. A 3-D seismic volume from the southern Canadian Cordillera in SW Alberta has been made available to FRP by one of our sponsor firms. A preliminary interpretation of this data set shows that it images a lateral ramp structure at depth. Current work is concentrated on the seismic interpretation of this volume. This will be followed up with analog centrifuge modelling using models constructed to simulate the mechanical stratigraphy of the region, in order to investigate factors which influence the nucleation of lateral ramps, and development of associated structures in the thrust sheet and footwall adjacent to lateral ramps.