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**Poster 20**

# STRUCTURAL STYLE AND STRUCTURAL EVOLUTION IN THE HAWKE'S BAY REGION, NEW ZEALAND

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This poster presents the analysis of regional 2D seismic lines across the Hawkes Bay region offshore east coast of the North Island of New Zealand. The study area is located in the outer forearc and contractional domain of the Hikurangi subduction complex. Detailed intrerpretation of long regional 2D seismic lines has indicated that the area underwent rifting in the Cretaceous, thermal sag and subsidence in the Paleogene, followed with contraction and thrusting in the early Miocene, extensional faulting in middle to late Miocene together with continued thrusting and inversion in the Pliocene to Present Day. Within the Neogene section three principal depositional sequences were identified representing growth strata deposited during different deformational phases - a syn-thrusting sequence, a syn-extensional sequence and a syn-inversional growth stratal sequence.

Within the study area three tectono-sedimentary domains were identified based on the difference structural styles and sedimentary architectures. In the north the Raukumara Shelf is characterized by thrust fault-related folds, inverted extensional faults and gravitational sliding structures. In the central domain of Hawkes Bay itself, a series of Present Day active thrust faults occur associated with folds and inverted extensional faults. The southern structural domain, the North Wairarapa Shelf, is characterized by thrust related folds and gravitational sliding structural elements.

Fold amplification characteristics, overall shortening and thrust fault spacings indicate that the shortening rates were relatively higher towards southwest of the study area. The extensional faulting in the Raukumara Shelf may indicate that subduction underplating and gravitational collapse of a supra-critical Coulomb wedge in this region.