The Antalya Basin- a study of the sedimentation and structural development in an active convergent plate margin

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The Antalya Basin is situated in the eastern Mediterranean Sea and is bounded by the southern coast of Turkey, the Florence Rise, and the island of Cyprus. The Florence Rise is part of the Cyprus Arc, which is an active convergent plate margin formed by the collision of the African Plate and Aegean-Anatolian Microplate. The purpose of this project is to interpret approximately 200 km of multi-channel seismic reflection data that run across the Antalya Basin which is essentially a deep water sedimentary basin in the fore-arc region of the plate margin. Ultimately the goal is to develop a stronger understanding of the active deformation of the fore-arc region. There are many challenges in collecting, processing, and interpreting the Eastern Mediterranean data. The interpretation will also include the imaging and understanding of salt mobilisation

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during basin development, as the salt layers formed during the Messinian play a dominant role in the structural evolution of the Antalya Basin.

The data used in this project consists of 200 km of multichannel seismic data collected in 2001 by a Memorial University research team. The specific lines in this project have been selected so that they complete a section of previously processed and interpreted seismic lines from the same 2001 data set. This reflection data will be analyzed by incorporating a variety of techniques by using the Halliburton Landmark Graphics packages; ProMAX will be used for the processing and the final images will be interpreted using SeisWorks.

The primary goal is to study the relationship of the sedimentation and structure throughout the evolution of a modern fore-arc basin in a convergent plate margin setting; where the convergence vector is rotating relative to the plate boundary. This will require comparing the various pre-arc basins which lie at different locations along the arc from the area of perpendicular convergence, which is this project area, to the area of transform faulting at the eastern end of the Cyprus Arc.