Curtin University

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Brief Summary

Salt structures are part of many sedimentary basins worldwide and often serve as traps for oil and gas reservoirs. Seismic reflection data and velocity models play a key role in interpreting such salt structures, but published velocity data for evaporites is rare and often confined to simple end member minerals (halite, anhydrite, gypsum). Further, salt bodies are treated as homogeneous in composition and structure or assumed to be seismically isotrope. The focus of this PhD project is on quantifying the microstructural, mineralogical and geophysical characteristics of evaporites and their contribution to seismic velocity anisotropy of salt bodies.

Education: Bachelor and Master in Geosciences at Goethe University Frankfurt, Germany

Research interests: Rock salt deformation, Seismic imaging, Microtectonics, Deformation mechanisms

Thesis title: Listening through rock salt: Quantifying petrofabrics and seismic velocity anisotropy of evaporites to improve seismic imaging

Supervisors: Nick Timms & Chris Elders at Curtin
David Healy & Enrique Gomez Rivas at University of Aberdeen

Conferences: (Grain- versus grain boundary-based quantification of shape preferred orientations in natural rock salt before and after experimental deformation) TIGeR Conference 2018; (A Tale about Grain Boundary Geometry) GESSS-WA: 2018; (Grain boundary-based quantification of Shape Preferred Orientations using Scan lines) EGU 2019; (Triaxial Hydration Experiments in the System CaSO4*H2O on wet anhydrite) DRT 2019

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