

**Manchester Geological Association**  
**Williamson Building, University of Manchester**  
**Wednesday 13<sup>th</sup> November 2013 – 6.30pm for 7.00pm**

**Field Mapping and Geochemical Evidence for the Occurrence of Two Phases of Dolomitisation in Eocene Carbonates, Gulf of Suez, Egypt**

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This study focuses on the formation of dolomite bodies formed adjacent to a major fault bounding the Hammam Faraun Fault (HFF) block, onshore Gulf of Suez (Egypt). This field area provides an excellent opportunity to assess the mechanisms responsible for dolomitisation due to the pseudo-3D nature of the exposures. Dolomitisation in the Eocene Thebes Formation occurs as two principle forms:

- i) stratabound bodies up to 300 m long, 15 m thick and extending up to 2 km away from the fault. These bodies exhibit preferential dolomitisation of specific limestone facies.
- ii) massive dolomite pods, up to 400 m long, located in close proximity to the fault. These bodies are non-facies selective relative to the precursor limestone.

Following extensive fieldwork and detailed sampling, thin section analysis was conducted to characterise the dolomite bodies prior to geochemical fingerprinting using trace elements, stable isotopes and strontium isotopes. The trace element analyses show the concentration of various elements present in each dolomite body. The stable isotope analysis provides a clue to the temperature at which dolomitisation may have occurred, and the strontium isotopes are used as a tool to constrain the timing of dolomitisation.

This presentation will introduce the audience to a variety of geochemical analyses used to determine the various factors associated with the process of dolomitisation. It will also present a conceptual model for dolomitisation, tied to the structural evolution of the Gulf of Suez.

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Coffee, tea and biscuits will be available from 6.30pm in the rest area on the first floor.