

Characteristics of slow-moving submarine landslides

Project Description

Submarine landslides are catastrophic collapses of slope sediments that flow downslope due to gravity. Landslides on the Hikurangi margin offshore New Zealand show evidence for active, creeping deformation, and slow downslope movement. IODP expeditions 372 and 375 comprised a coring and LWD (Logging While Drilling) targeting some of the deposits. This PhD project will primarily use IODP data in combination with bathymetric and seismic data from the area to characterise slow-moving submarine landslides. The central research question that this project addresses is: what are the lithological and rheological properties of slow-moving submarine landslides? Submarine landslides are commonly considered to happen catastrophically implying that if not all, most submarine landslides move rapidly, which had implications for tsunami generation and seafloor installation hazard. Yet there is evidence that some events exhibit creeping behaviour and might even be active presently. The aims of the project will be:

- a) To examine the deformation style of slow-moving submarine landslides; and
- b) To explore the mechanisms that cause creeping behaviour.

The PhD candidate will have the opportunity to spend time with project partners in New Zealand at the National Institute for Water and Atmospheric Research and at CSIRO in Australia.

Supervisors: Dr Aggeliki Georgiopoulou (UCD), Dr Joshu Mountjoy (NIWA), Dr Ben Clennel (CSIRO), Dr David McNamara (NUI Galway)

Person Specification

- A BSc in Geology or Earth Sciences with a strong background in Marine Geology.
- A minimum grade of 2:1, or equivalent.
- Willingness to travel and participate in marine expeditions.

Desirable

- A MSc in Marine Geology, or equivalent.
- Experience in working in sedimentary cores.

University College Dublin

The UCD School of Earth Sciences has an internationally recognised reputation for excellence in teaching and research in the areas of Fault Analysis, Geochronology, Petrology & Isotope Geochemistry, Geophysics, Marine & Petroleum Geology, Palaeobiology and Palaeoclimatology. The school is the lead participant and host for the iCRAG. We have a vibrant international community comprising of researchers from over 15 countries and our schools research funding typically exceeds €2 million per year, with research projects currently supported by more than 13

international petroleum companies.

Contact information

Informal queries are welcome.

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