ARCHITECTURE AND FAILURE MECHANISM OF THE OFFSHORE SLUMP RESPONSIBLE FOR THE 1998 PNG TSUNAMI

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After considerable controversy over the origin of the July 1998 PNG tsunami, there is now a large body of evidence that supports a sediment slump offshore of the devastated area. In association with onshore run-up measurements, four surveys carried out between 1999 and 2000 offshore of the most affected area have resulted in a composite suite of data that locates and images the slump and also allows appraisal of its geotechnical properties. The data acquired includes multibeam bathymetry, high-resolution 3.5kHz data, multichannel seismic, and piston cores in association with ROV and submersible images and direct seabed observation. During a further seismic survey in 2001, new data was acquired over the northern PNG offshore area, with a closely spaced grid of single channel seismic data over the slump. The new data set allows for the geology of the northern margin to be better defined and for the internal architecture of the slump to be identified. The susceptibility to slumping of the area offshore of northern PNG can be more definitively assessed. The interpretations and analyses employed in this work may assist in identifying other offshore regions susceptible to similar slumping and tsunami generation.