



Large-Scale Submarine Mass-Massing offshore Uruguay

Daniel Winkelmann (1), Julia Schwab (1), Michi Strasser (2), Benedict Preu (2), Tilmann Schwenck (2), and Sebastian Krastel (1)

(1) Cluster of Excellence “The Future Ocean”, Leibniz Institute for Marine Science, Kiel, Germany,
(dwinkelmann@ifm-geomar.de, +49 431 600 2941), (2) Center for Marine Science (MARUM), University of Bremen,
Bremen, Germany

New geophysical data acquired during cruise M78/3 with RV “Meteor” in 2009 reveal large-scale mass-wasting along the passive continental slope offshore Uruguay. The slope failure is hosted in contouritic deposits between 1800 and 3300 m water depth, affecting an area of at least 1200 km². Two escarpments up to 100 m high run along the slope. Echo-sounding data indicate that they are headwalls of individual failures with associated acoustically transparent sediment bodies. Sediment cores recovered from 3 transects across the failure complex confirm that the acoustic transparent units are debrites. Structure and geometry of the failure complex is indicative for a retrogressive submarine slide. Sedimentological evidence in accordance with hydro-acoustic data indicate that debrites deposited downslope of this failure complex are recent (Holocene) features on the slope. The morphology of the headwalls is underlain by a deeper reflector which we interpret as detachment. The detachment probably correlates with a regional BSR. Listric faults positioned upslope of the headwalls root into this detachment and are precursor of future failure at the location.