



New data from the Sahara Slide complex off NW-African: timing, failure processes, and hazard potential

Sebastian Krastel (1), Mathias Meyer (1), Ingo Klaucke (1), Russell B. Wynn (2), Aggeliki Georgiopoulou (3), Inga Golbeck (1), and Daniel Winkelmann (1)

(1) Leibniz Institute of Marine Sciences, IFM-Geomar, Marine Geodynamics, Kiel, Germany (skrastel@ifm-geomar.de, +49 431 6002941), (2) National Oceanography Centre, Southampton, UK, (3) University College Dublin, Ireland

The Sahara-Slide complex (NW-Africa) is a mega slide with a length of ~700km and an estimated volume of ~600km³. The morphology and evolution of the headwall area of the Sahara-Slide complex was investigated during a Poseidon-Cruise in early 2010 by means of acoustic data and gravity coring. The bathymetric and sidescan data show a slab type failure with multiple headwalls and at least two glide planes. Some areas are characterized by elongated blocks, which have not moved far, while other areas are characterized by quickly disintegrating sediment masses. Seismic data show older mass transport deposits and giant elongated mound-like features, which are aligned with the sidewalls. We speculate that migrating fluids in the mound-like features control the location of the failure. Previous investigations of the distal deposits of the Sahara Slide yield an age of 50–60 ka for the main slide event, which is a period of global sea level rise. Major slides off NW-Africa are all dated at periods of global sea level rise. This observation is challenged by new observations made during the Poseidon-cruise in early 2010. Numerous cores taken beneath the upper headwall complex suggest an age of only 1 – 2 ka for this major failure. We are currently investigating whether this age represents a major re-activation of an existing headwall or a major failure of undisturbed slope sediments. The young age of this slide calls for a re-assessment of the risk potential of this margin.