Mass wasting at the Siberian termination of Lomonosov Ridge, Arctic Ocean

Ursula Schlager, Wilfried Jokat, and Estella Weigelt
Alfred Wegener Institute, Geophysics, Germany (ursula.schlager@awi.de)

The Lomonosov Ridge is an 1800 km long continental sliver in the center of the Arctic Ocean. Beside its tectonic relevance it hosts glaciogenic features caused either by deep reaching icebergs or grounded ice sheets as well as indications for mass wastings. Systematic swath bathymetry acquired in 2014 provided an almost complete image of these shallow disturbances from almost 84° N to the foot of the Laptev margin.

Several arcuate transverse features are present on both sides of the crest of the eastern part of Lomonosov Ridge between 81° and 84° N. Eight of them are 2.1-10.2 km wide, 1.7-8.2 km long, 125-851 m deep, with height of headwall between 58-207 m and a slid mass volume of 0.09-7.58 km³. Due to the absence of scientific drill holes only a tentative seismic stratigraphy can be used for a rough age estimate of the mass wasting. All but one show a glide plane on top of a pronounced stratigraphic seismic horizon with strong seismic amplitudes. We will introduce the different geometries and statistics of these mass wasting features.