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ABSTRACT

Holocene environmental changes in the *Whales Deep* (Ross Sea), West Antarctica

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During the last few decades, researchers carried on discussion about on the way and timing of deglaciation on both hemispheres. Ross Sea (RS) shelf is a perfect area to study retreating process of West and East Antarctic Ice Sheets. The sea-floor topography of the RS was formed by the ice-streams flowing from Transantarctic Mountains and Marie Byrd Land during glacial periods and has been retreating since the Last Glacial Maximum (LGM). Therefore, RS is composed of several troughs and banks running across the shelf. Their directions indicate north- and west-ward ice-streams movement. Ice-marginal landforms formed under-water hills, i.e. the grounding-zone wedges (GZWs), which are lying on those bottom structures.

Whales Deep trough, located in the eastern part of the RS, was investigated during the NBP1502b cruise. Five kasten cores were taken along sampling transect which run through the RS shelf. They sampled region proximal to the Ross Sea Ice Shelf, the middle shelf, two GZWs, and from near shelf break region affected by the South Pacific waters. Each core represents different environment, which provides on entire spectrum of marine conditions and allows for comprehensive studies.

The aim of this study is to investigate organic matter in late Quaternary sediments and characterize various environments, which can help to assess credibility age determination for glacial retreat in the eastern RS. Up to now, little is known about the distribution, source and sedimentary conditions of organic compounds in this area. Biomarkers study supported by palynofacies analysis will be conducted. These new data will provide new insight into present and past environmental changes.