Shelf and coastal zone of the White Sea investigation on the basis of the multi-channel remote sensing data

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The results of the White Sea region space images processing, analyzing and geomorphological interpretation will be presented. For this study the available images of visual and near infrared bands received from different satellite systems RESURS - F (KATE-200 photo device), RESURS - 01/ 3 (scanner MSU-E), LANDSAT (scanner MSS), SPOT (HRV, XS) and aerial photographs, for a period since 1975 till 1998 have been used. Thematic interpretation has been made with support of relevant regional knowledge base and hydro-meteorological data using modern software, including GIS technology.

The characteristics and peculiarities of the shelf and coastal zone of the White Sea revealed from space data: patterns of land-sea interaction and sediments transport; rivers waters dispersion under different hydrometeorological conditions and near shore suspended sediments distribution; coastline change; places of beaches influenced by eroding or accumulating processes, evaluation of suspended sediment concentration in coastal waters; water dynamics and bottom topography feature; shallows, spits, banks; inter-tidal marshes; coastal landscapes for low and high water level cases.

The new knowledge obtained for area study will be used for coastline change prediction, for coastal and shelf zones management, for industrial development and for planning the oil and gas drilling operations, for ensuring measures for sustainable development and environment protection of northern areas.