



Strong internal tides in the Kara Strait

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Internal tides in the Kara Strait between the Barents and Kara seas are studied on the basis of moored current measurements, numerical modeling, towed CTD and ADCP measurements, and satellite images. The wave structure in the Kara Strait is similar to the Strait of Gibraltar. The vertical internal displacements (double amplitudes) related to internal tidal waves with semidiurnal frequency exceed 60 m. The energy of the internal tide is transferred to an internal bore and associated wave packets of short-period internal waves. The surface manifestation of internal tides is seen on satellite images. The flow of warm water from the Barents Sea to the Kara Sea influences internal waves. The internal tide propagating in the opposite direction to the flow intensifies and breaks down into shorter period waves that are seen on the satellite images in the southwestern part of the Kara Gates.