



Analysis of sediment transport pattern along the coastal line of the Curonian Spit

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Among a wide range of approaches for determination of long-shore sediment transport direction changes in grain-size parameters (mean, sorting, skewness) of beach deposits use not so often. There are two trends in alongshore distributions of surface sediments grain-size parameters which may indicate an alongshore transport (McLaren, Bowles, 1985): (a) sediments become finer, sorting and skewness decreases; (b) sediments become coarser, sorting decreases and skewness increases.

Over all more than 150 sand samples were collected along the coastline of the Curonian Spit during 2011, 2014 and 2015 summer seasons. The grain-size analysis of the samples were carried out and mentioned above grain-size parameters were calculated. Shore segments with different trends were identified using a running 9-nodes window, level of significance of trend analysis was estimated. Results of the method testing reflected different sediment transportation patterns for different years. However for other areas such as embayed coasts at the Gulf of Finland this method showed presence of one-directed longshore sediment flow.

As a result it is possible to say that for straightened coasts such as the Curonian Spit the method allows to determine the alongshore flux pattern formed by the last significant storm event, i.e. to estimate an actual consequence of winds and waves influence in the studied area and can not be used for describing multiannual longshore sediment transport.

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