Time series of suspended sediment transport in tidal channels – A case study from the backbarrier area of Spiekeroog Island, German North Sea (poster)

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The backbarrier wadden sea exchanges most of its water body within one tidal cycle above all through tidal channels. For studying the suspended sediment dynamic and budget the subproject “Hydrodynamic of the Wadden Sea” of the multidisciplinary research group „BioGeoChemistry of the Wadden Sea” concentrates the measurements on the main tidal channel supplying the backbarrier tidal basin of Spiekeroog Island, Lower Saxony, German North Sea Coast.
A combination of acoustical and optical instrumentation was used to estimate tidal current velocities and directions, suspended sediment concentrations and floc sizes over a transect across this main channel. Measurements were carried out hourly covering the entire tidal cycle.
The transport of the suspended sediment can be splitted into the bottom boundary layer and the open water column. Within the bottom boundary layer more material but with a smaller floc size is transported than within the open water column. This is reversed during slack water as the flocs are settling out and flocculation through differential settling occurs. Floc size variations are shown in temporal and vertical profiles.