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## On the sensitivity of sediment system in the East Frisian Wadden Sea to climate change

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The paper addresses the individual and collective contribution of tides, wind waves and sea-level rise to the dynamics of sediment in coastal areas. The results are obtained from simulations with the General Estuarine Transport Model (GETM) coupled with a sediment transport model. Several scenarios have been developed aiming at revealing possible trends resulting from realistic (observed or expected) changes in sea-level and magnitude of wind waves. It is demonstrated that these changes not only influence the concentration of sediment, which is very sensitive to the magnitude of the external forcing, but also the spatial and temporal variability patterns. Under a changing climate forcing the horizontal distribution of the integral effect of deposition and erosion changes considerably along with changes in the balance of export and import of sediment from the intertidal basins. We show that this trend does not follow simple rules already known from earlier studies, thus implicating the need to further apply 3D models in the research of the behaviour of sediment systems under climate change.