Tiny is mighty, right?
Do microphytobenthos structure intertidal ecosystems?

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Microphytobenthos are tiny algae living in and on the sediment in marine and freshwater ecosystems. In tidal shallow waters, microphytobenthos provide food to an important part of the macrobenthos, that are subsequently consumed by crustaceans, birds and fish. Therefore, they are crucial in the estuarine and coastal food web. We expect that microphytobenthos largely structure these higher trophic levels.

Spatial patterns of microphytobenthos on tidal flats and their food web interactions have mainly been studied on small scales and were limited by the availability of in situ measurements. We aim to develop a predictive model for macrobenthos based on remotely sensed information of microphytobenthos and sediment type.

We will develop a method to retrieve benthic diatom biomass from remotely sensed information and develop a model to predict diatom primary production and macrobenthos abundance on a basin scale from satellite remote sensing. We will test the generality of our model by applying it to three contrasting tidal basins in the Netherlands (the Oosterschelde, Westerschelde and the Wadden Sea). In addition, we will explore possibilities to apply the model to the Sand Engine.

The project has just started, which means the poster will be a presentation of plans and hopefully provide food for discussion, inspiration and perhaps collaboration.