



## **Characteristic scales for eco-morphological processes in tidal flats and salt marshes**

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The morphological evolution of tidal landforms such as tidal flats and salt marshes in estuarine landscapes is strongly affected by the interaction as well as feedback among hydrodynamics, sediment transport and vegetation biomass. In order to simulate the long-term dynamics of these complex environments, the key processes must be selected and suitable sub-models developed. Yet, the coupling of these biotic and abiotic processes is not straightforward. In reality, one of the most challenging aspects is to account for the wide range of temporal and spatial scales involved such as: sub tidal dynamics of the hydrodynamics and sediment transport; erosion and deposition; tidal channel initiation and meandering; seasonal cycle of the vegetation growth; long term vagaries of external forcing (e.g. eustatism, storminess).

In this contribution, we investigate the chief processes and the associated characteristics scales systematically, highlighting the possible interaction among factors acting on different spatial and temporal scales. This prerequisite analysis calls for the further creation of an eco-morphological model for salt marsh evolution.