



## **Traits of estuarine marsh plants affect wave dissipation**

Tilla Schulte Ostermann, Maike Heuner, and Tjeerd Bouma  
Germany (tilla.schulte.ostermann@uni-oldenburg.de)

Estuarine vegetation can attenuate hydrodynamic forces such as waves or flow velocities and therefore has an important role in natural tidal bank protection.

This function depends on the degree of hydrodynamic forces, bank morphology and on plant traits of the dominant species. The traits vary between the species but also between different marsh sites. Biomass, stem density and biomechanical properties are crucial factors that influence the rate of wave dissipation. These properties illustrate the trade-offs a species is facing in such a dynamic habitat and highlight the ability of dominant species such as *Bolboschoenus maritimus* and *Schoenoplectus tabernaemontani* to protect the tidal bank.

Along the Elbe estuary, traits of dominant marsh plant species were measured on different sites. The sites vary e.g. in their elevation, salt levels and inundation periods. To analyse the role that plant traits can play in wave dissipation, the structure of the vegetation as well as the composition was recorded. Biomechanical tests helped to understand the species traits regarding stem flexibility and to determine the effects of plant traits on wave dynamics and vice versa.

On the conference, we will present how plant traits affect the wave dissipation on tidal marshes and why they vary.