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Orientation: Ocean observation and Global change
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PhD project: Impact of storm waves on coastal beach-dune geomorphology at Aveiro-Cabo Mondego stretch (NW Portugal)

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Summary: The present proposal analyses how the beach morphology and extreme water levels determines frontal dune erosion, overwash and flooding over the coastal sector Aveiro-Cabo Mondego (NW Portugal). The work plan includes a set of beach topobathymetric, hydrodynamic and video-imagery data used to calibrate and validate models of wave propagation, runup and beach morphodynamics including the submerged active beach profile. Dune and beach morphologic features will allow to differentiate the pre- and post storm beach and dune state. As result, it is hoped to identify contrasting behaviours between more anthropic sectors and more preserved ones within the coastal sector, considering the beach morphology and the incident waves at different time scales (events - decade) and to characterize the differential response of the study site to extreme-induced wave conditions. The results will enable to test practical tools and methods to evaluate future vulnerability and support decisions for coastal management and users.

