

A video system as a multi-tool to monitor the Belgian coast

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A large variety of natural processes is acting at the coasts over wide ranges of spatial and temporal scales. Their consequences are multiple and some of them can be catastrophic, given the high degree of development of human activities. Erosion is an important consequence of these natural coastal processes, originating from meteo-marine forcings such as waves, tide, and winds. Coastal erosion is expected to intensify due to sea-level rise, storminess and increase of human pressures. Therefore, it is crucial to monitor the coast in order to undertake actions for protecting it as well as to get further insights about the natural processes driving beach morphological changes. A video monitoring system equipped with six cameras looking in different directions, is installed on a 44m high building in Mariakerke near Ostend. It is in operation at the site since June 2014. The Argus system takes semi-hourly a snapshot image, and a single image frame of the first of 10-minute image recorded, for each camera. They are automatically saved during day light hours and operate through all weather conditions. The video system has been used to assess storm impacts on the intertidal beach. Another purpose of the system is to locate and to track aeolian features, as well as to monitor surface moisture content on the beach for a large coverage in time and space. Video imagery coupled with meteo-marine forcings is a powerful multi-tool to get a comprehensive view of the processes and morphology occurring at the coast and to support decision making for sustainable coastal management.

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