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Sommario	<p>This thesis proposes a study on the rip currents development within a Mediterranean embayed beach. The rip (or cross-shore) currents are among the most investigated phenomena in the field of coastal research, and their fame is due to their environmental and socio-economic implications. The coastal areas are considered as transition environments, where hydrosphere, lithosphere, biosphere, atmosphere and (often) anthroposphere meet. The rip currents are a crucial component of the coastal hydro-morphodynamic processes (hydrosphere and lithosphere) (Short, 1999; Castelle et al., 2016), play a role in larval recruitment processes (biosphere) (Shanks et al., 2010), and they are also well known as risks source for beachgoers (anthroposphere) (Short and Hogan, 1994; Austin et al., 2012). However, the rip currents role along the Mediterranean coasts is often neglected, and most of the literature concerns the rip currents in oceanic environments. The aim of this research is a detailed description of the rip currents behaviour along a Mediterranean embayed beach, also considering the possible sea-level rise implications. The study area was identified within Levanto bay, along the eastern Ligurian coast (NW Italy). The research activity has been conducted through an integrated application of several investigation methodologies, in order to obtain the best possible results in terms</p>

of phenomena description. The rip currents individuation is performed through a coastal video-monitoring system installed on the Levanto beach, and the collected data were processed through a dedicated software for coastal video-monitoring (Brignone et al., 2012). Several field surveys were performed to obtain a full description of the geomorphological boundary conditions (topobathymetric surveys and sedimentological sampling). The rip currents description and evaluation were executed through the application of the XBeach model (Roelvink et al., 2009), which is a well-known tool for coastal modelling. Moreover, the modelling approach allowed the evaluation of the possible rip currents response under different sea-level rise scenarios (local sea-level projections to 2100) (Kopp et al., 2014). The obtained results show a detailed description of the rip currents phenomena, showing their essential role in the local coastal dynamics. The proposed research approach has proved to be reliable for the rip currents investigation in the Mediterranean environment, and it can be applied along any stretch of coast of the Mediterranean Sea. Moreover, the modelling results showed a significant relation between sea-level rise and rip currents behaviour. The results of this study highlight the role of the rip currents in the Mediterranean environment and represent a firm basis for the rip currents investigation along the Mediterranean coasts.

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