

Variation of topography and surface sediments before and after the typhoon Kompasu on open-coast intertidal flat of the Gochang, southwestern coast of Korea

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The Gochang open-coast, intertidal flat is located in the southwestern coast of Korea (the eastern part of the Yellow Sea), characterized by macro-tide in tidal range, an open-coast in its type, and sand substrates. In the Gochang intertidal flat, this study has investigated the typhoon effects of topography, surface sediment, and sedimentary environment, appeared before and after the typhoon Kompasu. The typhoon Kompasu moved along the southwestern coasts and across midlands of the Korean Peninsula from 1 to 2 September in 2010. This route of the typhoon, moving across the eastern Yellow Sea and the peninsula, was a rare case in the southwestern coast of Korea, and there was not the similar route case in the study area since the typhoon Kompasu. The surface topography in the middle-to-lower tidal zone became lower after the typhoon rather than that before the typhoon. The lower topographic change is indicative of surface sediment erosion caused by the typhoon wave. The Gochang intertidal flat is mainly composed of fine to coarse sands, and the ratio of fine sand is the largest. Spatial distribution pattern of sedimentary facies before the typhoon showed a trend of coast-parallel bands of fine sand facies and medium sand facies, whereas that after the typhoon represented a simple distribution of fine sand facies, not showing the coast-parallel bands.

Keywords: typhoon effect, surface sediment, open-coast, intertidal flat, macro-tide

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