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## Variations between deposition and erosion environments recorded in the shell sediments during the past 1300 years in the South coast of the Korean Peninsula

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We found five shell and gravel layers formed by storming events in the western-most Dori island of the south coast of the Korean Peninsula, in which the variations of the dominant deposition, the neutral and the dominant erosion environments were recorded during the past 1300 years. The event layers were formed at 2.2-2.9m above mean sea level in the north side of the island facing the Yeongjeon beach. The island is connected with the coast by tombolo of which the geomorphology and the height are currently very changeable at every storming event. The tombolo and the event layers are thought to be similar to their forming mechanism, because they are almost connected to each other, even though they were formed at different elevation. Regarding the different elevation, it can be inferred that the event layers were formed by the stronger storming energy than the one forming tombolo. Each storm delivered the sediments having the different ratios of two kinds of shell groups to the site. Seventeen species of shells were identified from the five layers, based on Korea Marine Invertebrates Encyclopedia, and they were divided into two groups living in sand and/or mud (group 1), on the rock and/or gravel (group 2). The weight ratios of group 1/group 2 of each layer are 0.6297 (layer 1; 720 yr AD), 0.901 (layer 2; 880 yr AD), 0.4246 (layer 3; 950 yr AD), 0.6012 (layer 3; 995 yr AD) and 0.1097 (layer 5; 1535 yr AD), respectively. The high ratios of the layers mean dominant deposition environment, and vice versa. The results provide that sediments of layers 1-4 formed in medium to dominant deposition environment of the warm period (MWP), but the sediment of layer five formed in dominant erosion environment of cold period (LIA).

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