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Four-season variation of 2014 year in the surface sediments of the Gochang beach, southwestern coast of Korea

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The marco-tide, open-coast Gochang beach, located on the southwestern coast of Korea, was studied in terms of four season variations in surface sediment and sedimentary environment. During the four seasons of winter (February), spring (May), summer (August), and fall (November) in 2014 year, surface sediments of total 252 sites were sampled across three survey lines, consisting of 21 sites at 30 m intervals in each transverse line to the coast, respectively. The Gochang beach comprises the Dongho, Kwangseungri, and Myeongsasipri beaches from north to south.

The pocket-type Dongho beach is mainly composed of very fine sands to very coarse sands, and the ratio of fine sand is the largest. The average of grain size is the coarsest in the winter. The spatial distribution of surface sediments shows a coast-parallel trend of fine and medium sands during the four seasons. During the winter, the upper tidal flat was dominated by medium sand, while the lower tidal flat was dominated by find sand.

The surface sediments of the Kwangseungri beach are mainly composed of fine-grained sands, and the mean grain size is the coarsest in winter. Grain-size distribution shows a uni-mode pattern in the four seasons. Mud facies partly exist in spring and summer seasons, whereas it is rarely shown in autumn and winter. The spatial distribution of surface sediments shows a coast-parallel trend of fine to coarse sand during the four seasons.

The Myeongsasipri beach is mainly composed of very fine sands to very coarse sands, and the ratio of fine sand is the largest. Grain-size distribution shows a weak bi-modal trend in the autumn and a uni-mode pattern in the spring, summer and winter. The mean grain size of the winter is the coarsest among those of four seasons. The spatial distribution of four seasons also shows a coast-parallel trend.

During the four seasons of 2014 year in the Gochang beach, overall distribution of the grain sizes represents a fining trend from upper to lower tidal area.

Keywords: seasonal variation, surface sediment, macro-tide, beach, Gochang

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