講演会のお知らせ

「東ユーラシア・環日本海域国際環境セミナー」

日時：２０１７年１月１０日（火）　１３：００－１４：３０

場所：金沢大学角間キャンパス　自然科学本館１０６講義室

講演題目：　"Holocene sea-level changes in Korea"

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対象：一般、学生

使用言語：英語

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Holocene sea-level changes in Korea

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Abstract

One of the most well-known consequences of global warming is sea-level rise. Sea-level fluctuation is the primary factor for the evolution of coastal landscapes and sedimentary environments, and can be a major cause of coastal erosion, flooding, and saltwater intrusion. Several factors are generally taken into account when interpreting sea-level changes. Glacio-eustasy, tectono-eustasy and geoidal-eustasy can change sea-level on a global scale. On a regional scale, sea-level fluctuations are affected by many other factors such as isostatic responses or geoidal responses to changes in ice or water load, seismo-tectonic processes, and changes in the regional seafloor topography. Changes in relative sea level (RSL) result from glacial isostatic adjustment (GIA) are world-wide phenomena, but small scale processes such as tectonic (vertical) deformation, volcanic processes, sediment flux and compaction, and tidal changes, play an important role for regional and local sea-level variation. Understanding these local factors is crucial for establishing the countermeasure plans for the future sea-level rise. The Yellow Sea was subaerially drained during the Last Glacial Maximum (about 21,000-18,000 yrBP), and the Korean region was no longer peninsular but was a part of the East Asia mainland. After the Last Glacial Maximum, the Yellow Sea region has been gradually flooded according to the postglacial global sea-level rise. Several researchers reported that the maximum sea-level during the Holocene was approximately 1-2 m higher than the present sea-level at around 6000 yrBP. These changes influenced the lifestyle of prehistoric human beings and affected the formation of present topographic shoreline features. Along the western coast of the Korean Peninsula, alluvial or coastal plains are widely distributed, especially in the low-lying coastal and river mouth areas. The recent Quaternary geology mapping project, conducted by the Korea Institute of Geoscience and Mineral Resources (KIGAM), drilled numerous cores in and around the Honam and Naju Plains and revealed that the largest parts of the plains were originally tide-dominated macrotidal flats. This paper deduces the late Holocene sea-level changes from the distribution of tidal flat sediments along the western coast of the Korean Peninsula. Our data show that the effects of local-scale factors such as changes in paleotidal range and sediment flux are more substantial than ever thought. This implies that the tidal power should be considered first for the future coastal defence and conservation.