Faculty of Science and Technology
Tokushima University

Elucidation of the origin of strata

Associate Professor Yu Saitoh

What can be read from the stratum

Past information

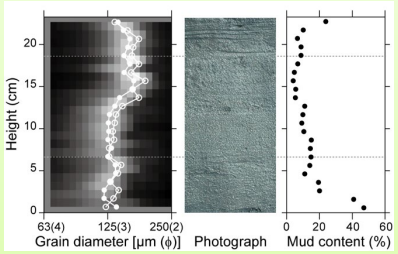
Sedimentary environment, climate, sea level, and crustal movement

Sandstone deposited in lower shoreface environment.

Alternation of sand and mud deposited on continental slope.

Current information

Sediment movement processes at difficult-to-observe situations (deep sea processes, storm coast, river mouth during floods, etc.)



Grain-size change in a sand layer from a river mouth suggesting fluctuation of flow velocity

Disaster information

Flood/tsunami occurrence frequency, and thir reach range, debris flow occurrence risk

Sandy sediments formed in coastal wetlands by the tsunami caused by the 2011 earthquake

Content:

We are conducting research aimed at elucidating the origin, formative processes and depositional environment of sedimentary rocks that make up the stratum. By elucidating the origin of sedimentary rocks, 1) information on the past global environment and crustal movements, 2) information on the current sediment movement process on the seafloor, and 3) information leading to the evaluation of natural disasters, can be extracted from the strata.

Among the various methods used in our laboratory to elucidate the origin of sedimentary rocks, the most basic one is on-site geological description and sampling. The sedimentary processes and environments, which were existed behind the formation of strata can be understood from the particle size and sedimentary structure of the stratum. Depending on the purpose, we will extract highly accurate and high-resolution information by additionally performing particle size analysis, mineral analysis with a polarizing microscope, chemical analysis, and heavy element stable isotope analysis.

Specific research themes include 1) elucidation of the diversity of turbidites in the Paleogene accretionary complex, 2) study of the substrata of the Tokushima Plain, 3) extraction of water information from sediments, and 4)elucidation of the relationship between isotope ratios of river mud and watershed geology.

Keywords : Sedimentology, geochemistry

E-mail: yu-saitoh@tokushima-u.ac.jp
Tel. +81-88-656-7242
Fax: +81-88-656-7242