

Sampling marine sediments: strategy and methods, equipments and artifacts

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Collecting representative marine samples is difficult.

The selection and the use of a proper device depend primarily on the main objective to be achieved, and on the processes we are investigating.

A variety of instruments has been developed for sampling “undisturbed” sediments samples in the whole marine environment (essentially grabs and corers), from easy-handling devices to heavy and complex systems.

The purposes span from monitoring superficial contamination, to the reconstruction of the past chronology of events occurred in the study area, and to the application of “tracer” techniques to study marine processes.

The talk will describe:

- the environmental processes leading to particle supply to the marine environment;
- the most commonly used systems for sampling marine sediments;
- the disturbances and the artefacts that can affect the representativeness of the sedimentary record .

Focus will be on “recent” sedimentation processes, and on sampling sediments in the biologically active zone.



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The outline of the talk is:

- Sources of particles: atmosphere, land, sea
- Sedimentation processes
- Collecting sediment samples
 - Devices: corers, grabs
- Pre-collection artifacts
 - Bioturbation
 - Mixing
- Disturbances during collection
 - Loss of superficial sediment / Washout
 - Shortening
 - Downtraining
- Post-collection artifacts
 - Freezing
- Strategy for minimizing loss of information



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