Investigation of Benthic Boundary Layer processes through seafloor observatories

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ABSTRACT

The investigation of the Benthic Boundary Layer (BBL) requires the study of a wide variety of different physical processes. In order to study the evolution of physical, geophysical, geological and biological phenomena, and to comprehend their possible interactions, a long-term monitoring using advanced observatories system is needed.

Unlike many approaches, the seafloor observatory represent a platform where a wider variety of instrument can be mounted. During several excursions on board, the observatory and higher sampling set are in addition, repositioning the observatory to the basement to study the evolution of different phenomenon along the oxygen minimum phenomenon that can occur in the BBL.

The stability of the water column is also an important issue related to the BBL and the accuracy of data obtained by the observatory. To reduce the noise levels during the data processing phase, the development of tools to improve the performance of the observatory is necessary. In addition, this observatory is a tool to evaluate the accuracy and effectiveness of the instruments used in the BBL studies.

MULTIDISCIPLINARY STUDY

In order to study and understand the phenomena that can occur in the BBL, it is necessary to study the interaction among different processes. This can be done by using an array of instruments mounted on the observatory. The data obtained from these instruments can be used to study the evolution of physical, chemical, geological and biological phenomena in the BBL.

CONCLUSIONS

The seafloor observatory represents a unique platform to study the BBL and its processes. The data obtained from this observatory can be used to improve our understanding of the BBL and to develop new methods for monitoring and predicting its behavior. The observatory can also be used to study the interaction between different components of the BBL, such as the oxygen minimum zone and the phytoplankton blooms, and to evaluate the impact of human activities on the BBL.