Special Session (SS23) on:

Ocean observation and exploitation: from deep sea to space

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The aim and scope of the special session:

There is an increasing demand for overall ocean data including the seafloor, the water column, the ocean surface, and the atmosphere above it. This is a formidable challenge due to the complexity of the ocean environment spatial and temporal variability. Satellites are a powerful ocean observation and surveillance tools although the data they produce requires special processing tools to yield valuable information. Another issue with satellite data stems from the low frequency of the observations over a given area at sea. To overcome this problem, there is widespread interest in the development and deployment of microsatellites and nanosatellites as a means to acquire data at the appropriate temporal and spatial scales. Though satellite data is of great relevance, the technology used only allows for data acquisition in a relatively thin layer of the ocean surface. Data in the water column is also of crucial importance and must be acquired in situ. This poses another set of operational challenges, specifically in offshore and exposed sites. Finally, data from the ocean seafloor requires yet another set of monitoring tools, which differ from the above. In this context, marine technologies, including marine robots, are expected to play an increasingly important tool in the acquisition of ocean data at unprecedented temporal and spatial scales.

Data integration and assimilation will not be possible without numerical simulation tools allowing for proper merging of data and models running at appropriate spatial and temporal scale and capable of providing climate reconstitution and forecasts both in the short term (operational forecasts) and in the long term (climate change analysis). Both short and long-term forecasts are critical for the development of ocean economic activities in the design, investment, and operation phases.

In line with the above trends, this workshop invites contributions related to space observation and modelling, in situ monitoring, deep sea floor mapping and ocean technologies (including ocean robotics) for marine renewable energy, offshore aquaculture and ocean mining.

SUBMIT AN ABSTRACT