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NUMERICAL MODELING OF AQUACULTURE INSTALLATIONS AND OTHER FLEXIBLE STRUCTURES IN OFFSHORE ENVIRONMENT

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ABSTRACT

This invited session was originally organized as "Numerical Modeling and Characterization of Nets for Marine Applications" at Marine 2013 (Hamburg, Germany) and Marine 2015 (Rome, Italy). It is presently run under a more general title "Numerical Modeling of Aquaculture Installations and Other Flexible Structures in Offshore Environment". Traditionally, the majority of the contributions deal with design, numerical analysis and testing of offshore aquaculture systems such as fishfarms, mussel lines and macroalgae growing facilities. However, there are also presentations on modeling of ocean energy installations, marine protective barriers, underwater safety-nets, and moored weather buys and other monitoring devices.

The objective of the session is to facilitate collaboration and exchange of expertise between researches involved in numerical modeling, design, and model basin testing of all kinds of flexible structures in marine environment. In particular, for aquaculture systems, the areas of interest include

- Assessment of coupled systems
- Response statistics and time domain analysis
- Moorings, buys, snap loads
- Large mass systems with or without internal water basins
- Classical permeable nets including nets in air
- Impermeable stiff or tarpaulin based structures
- Operations, well boats and other operations including contact elements
- Model basin and flume tank testing
- Full scale testing
- Fouling UV and other effects to parts in systems
- Novel systems
- Fish welfare