



Consiglio Nazionale delle Ricerche



ISTITUTO DI SCIENZE MARINE
Sede Territoriale (U.O.S.) di Bologna
Via Gobetti, 101
40129 Bologna

CICLO DI SEMINARI

Mercoledì 3 Giugno 2015
Sala riunioni terzo piano - ore 11:00

A NEW VIEW OF THE OCEAN USING SOUND: SEISMIC OCEANOGRAPHY

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Seismic oceanography (SO) is a scientific discipline that is applied to investigate the ocean using acoustic reflectivity data collected with multichannel seismic (MCS) systems, which were originally designed for solid Earth studies. The seismic reflexions generated within the boundaries of water masses with different thermohaline properties allow us to reconstruct images of the finestructure as well as mesoscale structures in the ocean. This acoustic method can sample lateral sections of hundreds of kilometers to full ocean depth, with resolutions of 10-100 m and 10 m in lateral and vertical dimensions, respectively, which covers an observational gap in physical oceanography.

In this presentation I will show a summary of the main thermohaline structures that have been detected in different areas of the world. I will also present the application of inversion methods to SO, with the goal of converting seismic images to maps of physical properties (T, S, density). At the end, I will introduce the project SEISMARE that it is going to be carried out in the frame of the Ritmare project, during the next two years.

