# *CONSIGLIO NAZIONALE DELLE RICERCHE*
## *ISTITUTO DI SCIENZE MARINE*

# CICLO DI SEMINARI

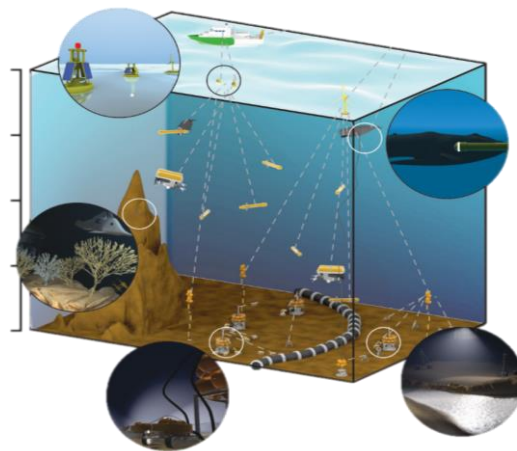https://cnronline.webex.com/cnronline/j.php?MTID=mee9ed5ac4049a6b7b8adf0cf915468df

Giovedì 9 giugno alle 14:30

## MONITORING OF FAUNA AND MARINE ECOSYSTEMS WITH ADVANCED ROBOTIC TECHNOLOGIES

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New monitoring technologies are advancing our understanding of marine communities and their habitat at all depths of the continental margins. Those technologies are being developed to provide relevant biological, oceanographic, and geochemical data on ecosystems changes in spite of growing industrial activities (e.g., oil, gas and mining or fishing extractions). If from one side, vessel-assisted technologies allow that multiparametric data acquisition at a geographic scale with ROVs and AUVs, other in-situ autonomous technologies, such as cabled video-observatories, can provide glimpses of biodiversity changes locally, at 24-h and seasonal scales. To integrate data collection at both space and time scales, cabled observatories are being integrated into networks of nodes (allowing data replication across habitat gradients), with docked robotic technologies such as crawlers and AUVs (or in the next future, biomimetic platforms), expanding their monitoring radius. In this context, I will detail my research lines in relation to: 1. Activity rhythms (that change community composition based on h habitat cycles); 2. In-situ monitoring technologies (as required to track biodiversity changes across spatio-temporal scales); 3. Routines for automated animal classification and counting and data organization into "intelligent data banks" (to remove manual processing and analysis); and finally, 4. The creation of a roadmap for the computing of indicator (as metric for ecosystem management).