

*CONSIGLIO NAZIONALE DELLE RICERCHE
ISTITUTO DI SCIENZE MARINE*



CICLO DI SEMINARI

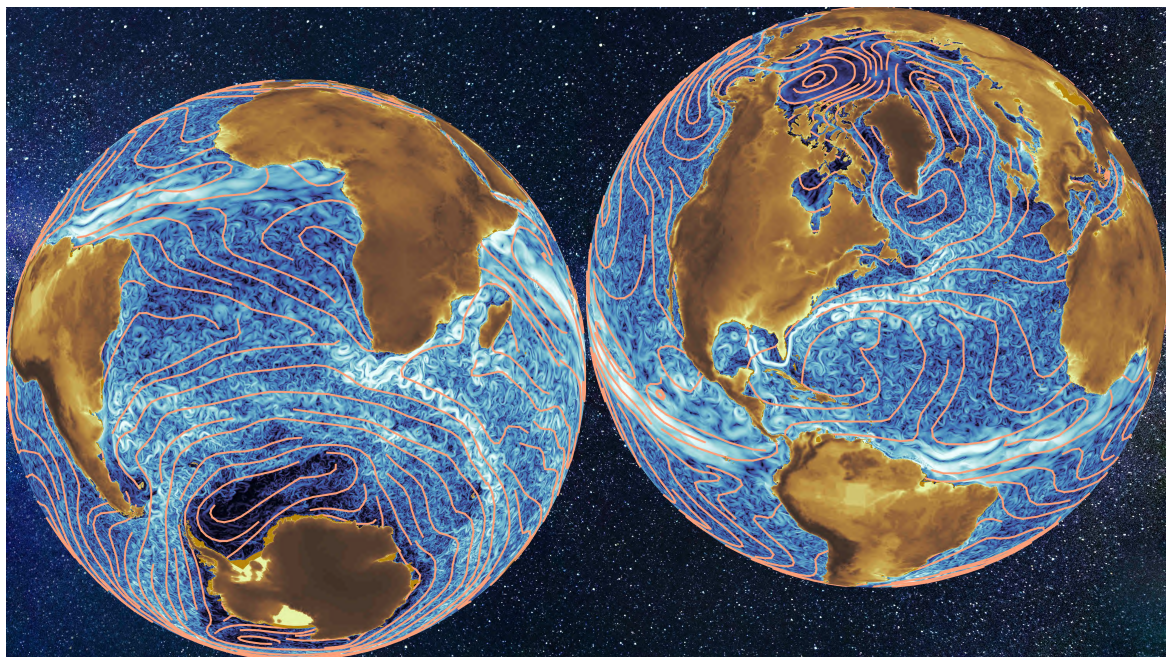
<https://cnronline.webex.com/cnronline/j.php?MTID=mee9ed5ac4049a6b7b8adf0cf915468df>

20 April, 14h30

Studying the Multi-Scale Dynamics of the Oceanic Symphony

Benjamin Storer

Department of Mechanical Engineering, University of Rochester



The world's oceans contain a vast array of dynamical features and processes that happen over a wide range of spatial and temporal scales. In this presentation, I outline the core ideas behind an analysis technique, "Coarse-Graining", that allows us to decompose complex flows to study how ocean characteristics change as a function of spatial scale. Importantly, this analysis retains both the full time series, while also preserving spatial localization.

We present the results of applying this analysis routine to ocean model data, and measure not only the energy contents of all resolved scales, from grid-scale to planetary scales, but also the non-linear transfer between those scales. This analysis shows how the atmospheric circulations imprint on the ocean to create oceanic energy cascades.