



Circulation and mixing in a deep submerged crater: Tore seamount

A. Peliz (1), B. Le Cann (2), and C. Mohn (3)

(1) Center of Oceanography, University of Lisbon, Portugal, (ajpeliz@fc.ul.pt), (2) Laboratoire de Physique des Océans, Ifremer, France, (blecann@univ-brest.fr), (3) Dept. Earth and Ocean Sciences, National University of Ireland Galway, Ireland (christian.mohn@nuigalway.ie)

Tore is a deep seamount system or ridge located west of Iberian Peninsula with the highest summit at nearly 2.8 km, and with an enclosed crater in the middle possibly resulting from a meteorite impact. This submerged crater is as deep as 5500 m and isolates a water column about 1200 m thick from the external deep water mass. Temperature, salinity profiles reveal that the water inside the crater is apparently mixed and the levels of oxygen are as high as in the exterior. Our aim is to investigate what processes may drive circulation and mixing over the abyssal complex topography focusing in the Tore crater. Preliminary results of the study are presented. The seamount dynamical context is analyzed and results of some exploratory experiments are described. Significant flow rectification is observed, and the role of different factors like baroclinic tides in mixing the Tore slopes and enclosed abyss (crater) are discussed.