

Séminaire de Ilana Wainer au LOCEAN

Nom : Séminaire de Ilana Wainer au LOCEAN

Titre : Climate driven changes in the South Atlantic since the Last Millennium

Laboratoire :

Nom du conférencier :

Son affiliation :

Date et heure : 11-06-2019 11h00

Lieu : Campus de Jussieu, salle de réunion LOCEAN, tour 45/55, 4eme étage

Résumé :

This study builds upon existing research suggesting recent changes in the circulation of global subtropical gyres with respect to the South Atlantic Ocean using simulation results from NCAR-CESM-LME. The results point to an intensification of the total anticyclonic circulation of the subtropical gyre and a southward displacement of the system, as revealed by the wind stress curl, sea surface height, and barotropic stream function fields. Increased values of these variables were found within the dynamical limits of the South Atlantic Subtropical Gyre (SASG), while their basin-scale structure seemed to be concurrently drifting poleward. Results are discussed for i) the northern boundary of the SASG where the southern branch of the South Equatorial Current (sSEC) bifurcates into the North Brazil Undercurrent to the north and the Brazil Current to the south. A southward migration of the sSEC bifurcation latitude (SBL) at a rate of $0.11^{\circ} \pm 0.03^{\circ}/\text{year}$ was observed, associated with a substantial increase in the equatorward advection of waters within the sSEC-SBL-North Brazil Undercurrent system. ii) At the southern limit of the SASG, changes in the Antarctic Circumpolar Current system associated with the Polar, sub-Antarctic and Subtropical Fronts in the Atlantic are examined. Results show that the Polar Front at 25°W shifts to the south by 0.8° during 1970-2000 compared to its mean latitude over the period 1050-1950. Differences in temperature and salinity throughout the water column at 25°W reveal that during 1970-2000 there is freshening of Antarctic Intermediate Water, whereas the Circumpolar Deep Water becomes saltier.

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