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WATER FLUX THROUGH THE GIBRALTAR STRAIT : OBSERVATIONS AND VALIDATION OF THE MODELS

par Javier SOTO

Université de Malaga

en salle de conférences de Navier

Abstract:

The Strait of Gibraltar is a key point to understand the circulation in the Mediterranean Sea. As its only connection with the global ocean, the exchange through the strait balances the heat and water budgets of the basin. In a two layer exchange, an inflow of warm and fresh Atlantic Water (AW) enter the basin while an outflow of cold and salty Mediterranean Waters (MW) leave the strait. The high evaporation rate over the basin produces a fresh water loss that is compensated by a net flow through the strait, and transforms the AW making them denser and triggering intermediate and deep convection processes. Since October 2004 a moored station deployed by the Physical Oceanography Group of the University of Malaga at the Espartel sill (the last gateway of the MW to the Atlantic) measures the characteristic of the Mediterranean outflow. These observations have been used to validate the output of different simulations from NEMOMED8 and NEMOMED12 ocean circulation models. After the validation, a long term simulation have been used to study the interannual variability and trends of the exchange through the strait, and of the different driving mechanisms involved.

Pour tout renseignement, contacter Y. Poirier (05 61 07 96 55) ou JL Sportouch (05 61 07 93 63)
Centre National de Recherches Météorologiques
42, Avenue G. Coriolis - 31057 Toulouse Cedex