



Global characterization of geophysical data using lagrangean data and Markov-chain statistics.

Alejandro Pares-Sierra and Ana Laura Flores-Morales

Centro de Investigacion Cientifica y Estudios Superiores y de Ensenada (CICESE)

A method for the global analysis of geophysical data is presented. Using short-period Lagrangean transports, calculated off-line from a numerical circulation ocean model (ROMS), a stochastic transition matrix is constructed. Iteration methods for this last, sparse, very-large matrix are used to solve standard Markov chain problem of time of arrival and destination. The method permits the identification of areas of influence, time of residence and connectivity between regions. Application for the Gulf of Mexico and the Eastern Tropical Pacific circulation is presented.