



Gulf of Tehuantepec, Mexico: summer mesoscale circulation

A. Trasviña (1,4), E.D. Barton (2) and P. Niiler (3)

(1) CICESE, Oceanografía Física – Unidad La Paz, La Paz, México, (2) CSIC, IIM, Vigo, Spain (3) SIO, La Jolla, California, (4) Sabbatical stay at CSIC, IIM, Vigo, Spain (trasvi@cicese.mx)

The main components of the large-scale circulation of the Eastern Tropical Pacific are known since the early work of Wyrtki. The details of the circulation at length scales of 10^2 km or less, the mesoscale field, are less known particularly during summer. The winter circulation is characterized by large mesoscale eddies generated by intense wind pulses. These propagate offshore and constitute an important source of mesoscale variability for the eastern tropical Pacific. The summer circulation has not commanded similar attention, the main reason being that many hurricanes spin-up in summer in the Gulf of Tehuantepec to render ‘in situ’ observations difficult. Before the experiment presented here, the large-scale summer circulation of the Gulf of Tehuantepec was thought to be dominated by a poleward flow: the Costa Rica Coastal Current. A drifter-deployment experiment carried out in June, 2000 supported by satellite altimetry and wind data was designed to characterize this current. Our results, however, show no evidence of the existence of such flow. Instead, this work demonstrates the presence of a summer eddy field capable of influencing large areas of the Eastern tropical Pacific. Even in summer the wind is capable of inducing eddy formation. This work also presents the main dynamic features of the eddy field as well as examples of its interactions with the wind field and with the large scale flow.