

On the monthly variability in the Gulf of California

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Intended for a presentation in the 2004 Oceans Sciences Meeting

Portland Oregon, January 26-30, 2004

Abstract. The HYbrid Coordinate Ocean Model (HYCOM) is used to study the monthly circulation in the Gulf of California. The eddy-resolving ($1/12^\circ$ resolution) Pacific Ocean model domain extends from 20°S to 65.8°N , but here the focus is on the Gulf of California region. The latitudinal extent of the model domain allows direct examination of the connectivity of the Gulf of California with the Pacific Ocean. Model results indicate that the variability of sea surface height, surface salinity, and surface currents is strongly influenced by an annual poleward-traveling downwelling coastally trapped wave that transports low salinity water, which originated outside the Gulf of California. This coastally trapped wave also generates a series of eddies along the axis of the Gulf.