

Modeled Circulation Patterns and Bioluminescence Distribution Predictions During Upwelling and Relaxation Events in the Monterey Bay Area.

Shulman, I., Naval Research Laboratory, Stennis Space Center, USA, shulman@nrlssc.navy.mil

Kindle, J. C., Naval Research Laboratory, Stennis Space Center, USA, kindle@nrlssc.navy.mil

Paduan, J. D., Naval Postgraduate School, Monterey, USA, paduan@nps.navy.mil

Ramp, S. R., Naval Postgraduate School, Monterey, USA, sramp@nps.navy.mil

Rosenfeld, L. K., Naval Postgraduate School, Monterey, USA, lkrosenf@nps.navy.mil

Haddock, S., H. D., Monterey Bay Aquarium Research Institute, Moss Landing, USA,

haddock@mbari.org

McGillicuddy, D. J., Woods Hole Oceanographic Institution, Woods Hole, USA,

dmcgillicuddy@whoi.edu

Moline, M. A., California Polytechnic State University, USA, mmoline@calpoly.edu

Nechaev D., University of Southern Mississippi, USA, dnechaev@ssc.usm.edu

DeRada, S., Sverdrup Technologies, Inc, Stennis Space Center, USA, derada@nrlssc.navy.mil

Anderson, S. C., Sverdrup Technologies, Inc, Stennis Space Center, USA, cayulas@nrlssc.navy.mil

Phelps, M. W., Sverdrup Technologies, Inc, Stennis Space Center, USA, phelps@nrlssc.navy.mil

This study uses the model originally configured as part of the Innovative Coastal-Ocean Observing Network (ICON) program to characterize dominant velocity patterns under upwelling- and downwelling-favorable wind regimes in the Monterey Bay area. In order to also include dominant flow effects from the broader California Current system, the ICON model is nested within the regional-scale NRL Pacific West Coast (PWC) model. This paper overviews ICON modeling results with the focus on: 1) multiyear analysis of the ICON and PWC model predictions that compare current structures during upwelling and relaxation events and 2) model interpretations and predictions of observed, short-term changes in bioluminescence intensity. The latter focus exploits unique observations of bioluminescence intensity made from ships and autonomous vehicles during three intensive summer field campaigns in 2000, 2002, and 2003.