



Upper-Ocean Contribution to Coastal Sea Level

Veronica Nieves (1,2), Marta Marcos (3), and Josh Willis (2)

(1) University of California, Los Angeles, California, USA (veronica.nieves@jpl.nasa.gov), (2) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA, (3) IMEDEA, UIB-CSIC, Esporles, Spain

Although it is challenging to formally separate natural cycles from the anthropogenic change, it is clear that local sea level has been responding to natural oscillations like the Pacific Decadal Oscillation. However, accurate predictions of the physical processes and interactions that drive local sea level changes are still many years away and decision makers need practical tools to interpret observations. Our analysis of altimeter data, long-term reconstructions and temperature records suggests that the upper ocean is as a critical source of information associated with internally-induced local sea level changes that last from a few years to a few decades. Built upon this idea, we have developed an indicator that identifies key coastal regions of the U.S. vulnerable to regional relative sea level rise in the coming decades. We feel our indicator will help the shorter-term needs of decision makers.