# Fast Winds and The Hydraulic Nature of California's Summer Marine Layer

**Dr. Clive E. Dorman, Ph.D.**
Research Oceanographer
Scripps Institution of Oceanography
cdorman@ucsd.edu 858-534-7863

**Dr. Darko R. Koracin, Ph.D.**
Research Professor
Desert Research Institute, Univesity of Nevada Reno
darko@dri.edu 775-674-7091

**Abstract:** The importance of the summer winds to coastal oceanography and upwelling has long been recognized but the details of the wind field have not. Instrumented aircraft flights, meteorological buoys and automated coastal stations have shown that there is an area of high speed winds the downwind lee of capes and weaker winds on the upwind side. The effects are proportional to the size of the cape. The eastward coastal bend of California beginning in Northern California acts as a very large cape, causing the general US West Coast wind maximum extending from Southern Oregon to Past Pt Conception. The reason for these wind structures is the hydraulic response of California's atmospheric marine layer moving along changing coastal topography.

0-933957-31-9