

## **JPL Wind Radiometer Measurements**

William J Wilson and Simon H. Yueh  
Jet Propulsion Laboratory, California Institute of Technology  
Bldg 168-327, 4800 Oak Grove Drive  
Pasadena, California 91109 USA  
Phone: (818) 354-5699 / FAX: (818) 393-4653  
Email [william.j.wilson@jpl.nasa.gov](mailto:william.j.wilson@jpl.nasa.gov)

**Abstract** - The purpose of the JPL Wind Radiometer program is to develop and demonstrate low cost instruments for remotely measuring ocean wind vectors from space. The microwave emission from the ocean surface is elliptically polarized and the degree of polarization and angle is a function of the surface wind speed and direction. JPL has developed a set of microwave polarimetric radiometers at 19 and 37 GHz (WINDRAD), which have been used on the NASA DC-8 and P-3 aircraft for remote measurements of ocean surface wind vectors. Measurements have been made in a variety of weather conditions over buoys in the Atlantic and Pacific oceans. A summary of all the ocean polarimetric data vs. wind speed and incidence angle from three flights in 1994 and eight flights in 1995, and four flights in 1996 will be presented. These data show clear wind direction signals at wind speeds from 3 to 24 m/s and incidence angles of 45° to 65°.