

Postdoctoral opportunity

Air-sea fluxes over waves and impact on upper ocean mixing

The objective of this research is to study turbulent fluxes at the air-sea interface and investigate how their dynamics are affected by realistic wind-wave condition. This is achieved by conducting and analyzing laboratory measurements of turbulent fluxes of momentum and temperature across the air-sea interface. The ideal candidate has experience with or interest in Particle Image Velocimetry and/or Laser Doppler Anemometry systems, oceanographic microstructure instrumentation (temperature, shear), and boundary layer dynamics. The experimental data is complemented by results from high-resolution non-hydrostatic numerical simulations, experience with numerical models, in particular computational fluid dynamics is a plus. Our lab also works on topics related to fiber-optics based sensors (temperature, flow), and bio-inspired engineering, in particular the implementation of mechanisms for reduction of boundary layer turbulence and drag using both passive and active approaches (shark skin, dolphin skin).