JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Friday, February 8, 2019
3:00 PM, 132 Gilman Hall

"Wave Breaking in Ocean Atmosphere Interactions"

Presented by Prof. Luc Deike
Princeton University

Breaking waves at the water surface is a striking example of turbulent mixing across a fluid interface. The impact of the jet generates turbulence, entrains air into the water and ejects droplets into the air. A fundamental understanding of the general multi-scale properties of the resulting air-water turbulent flow is necessary to develop more accurate gas transfer or spray generation parameterizations. I will discuss a multi-scale approach where air entrainment, bubble statistics and aerosol generation by bubble bursting is investigated by laboratory experiments and numerical simulations at small scale while ocean scale fluxes are obtained by up-scaling the results using statistical description of the wave and wave breaking field. This approach leads to semi-empirical formulations to be implemented in coupled ocean-wave models.