



JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

FALL 2021 CEAFM VIRTUAL SEMINAR SERIES

“The Understanding Surprising Role of Ocean Bubbles in Weather and Climate: From Computer Simulations to Ocean Simulators”

Presented by Dr. Grant Deane

Scripps Institution of Oceanography – UCSD

Hosted by Rui Ni (MechE)

The air-sea boundary covers 71% of Earth and exchanges across it play a critical role in weather and climate. Breaking waves on wind-driven seas entrain clouds of bubbles that enhance the exchange of CO₂, influence cloud formation through the cloud drop and ice nucleation particles found in sea spray, and enhance planetary albedo. Despite their importance, little is known about the formation and behavior of bubbles in oceanic whitecaps because of the difficulties of field observations; studying whitecap bubbles in storms is both challenging and expensive. This talk will consider recent advances in our understanding of this complex topic and new tools developed to study bubbles and foam from breaking waves, including computer simulations, field studies, and the new Scripps Ocean Atmosphere Research Simulator (SOARS).



Grant Deane is a Researcher in the Marine Physical Lab. at Scripps Institution of Oceanography, UCSD, La Jolla, California. His work focuses on breaking waves, underwater acoustics, and glacier acoustics research in the Arctic. He seeks to understand how ocean/atmosphere and ice/ocean interactions can be measured and monitored using underwater sound and what this means for gas exchange, aerosol generation, melting glaciers and sea level rise. Grant values collaborations across disciplines and works to connect his science with art. He has worked with artists

such as Mia Feuer's ARTerrain Gallery and weaves his work into public outreach efforts. He earned his D.Phil. from the University of Oxford, England, his M.Sc. from the University of Auckland, New Zealand, where he also earned his B.Sc.

Friday, October 22, 2021 at 3:00 PM
<https://wse.zoom.us/j/93762992307>