

Date: September 16th, 2005

Time: 11:00 AM

Location: Maryland Hall 110

Speaker: Dr. James Edson
University of Connecticut

Title: “Investigations of Momentum and Energy Exchange Near the Air-Sea Interface”

Abstract

The transfer of momentum, heat, and water vapor across the sea surface couples the atmosphere with the ocean. From an atmospheric perspective, the transfer of heat and water vapor from the ocean to the atmosphere represents the energy that drives the atmospheric engine. In turn, the momentum exchange from atmosphere to ocean drives waves and currents and will remove energy from the atmosphere. To improve marine forecasts and coupled atmosphere-ocean models, we need to improve our understanding of these physical processes and the way they are simulated in numerical models. These talks will describe some of these efforts using data taken at the Martha's Vineyard Coastal Observatory (MVCO) during the recently completed Coupled Boundary Layers and Air-Sea Transfer (CBLAST) experiment. The first half of the talk will focus on the exchange of momentum and kinetic energy between the ocean and atmosphere. It will describe ongoing efforts to improve parameterizations of the momentum flux and our investigations of wind-wave-swell interaction. The second half will focus on the exchange of heat and water vapor between the ocean and atmosphere. It will describe ongoing efforts to improve the parameterization of the sensible and latent heat fluxes and our investigations to improve predictions of fog in coastal regions.