

On air-sea fluxes at high winds

W.M. Drennan¹ and E. Sahlee²

¹*Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, FL 33149, USA, E-mail: wdrennan@rsmas.miami.edu*
²*Department of Earth Sciences, Meteorology, Uppsala University, Villavägen 16, SE-75236 Uppsala, Sweden, E-mail: Erik.Sahlee@met.uu.se*

At high winds, the presence of breaking waves, bubbles and sea spray are expected to significantly modify air-sea transfers. This has been predicted by various models (e.g. Woolf, D.K., 2005: *Tellus* 57B, 87-94), but as yet there are very few data sets with which to validate the models. Here we present or review several recent data sets of air-sea fluxes collected at wind speeds over 20m/s. These data sets include momentum, heat and humidity fluxes collected from aircraft flying in tropical cyclones during CBLAST (Drennan et al 2007, JAS; Zhang et al 2008, GRL), as well as open ocean data from drifting Air-Sea Interaction Spar (ASIS) buoys in the Atlantic and Southern Oceans during the Deep Ocean Gas Exchange Experiment (DOGEE) and Southern Ocean Gas Exchange (SOGasex) experiments. We also discuss measurements from the new Extreme Air-Sea Interaction (EASI) buoy planned for 2010.