



Ocean Surface Observations of the Diurnal Cycle of Turbulence with ASIP

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The STRASSE field experiment was conducted in August/September 2012 as part of the Salinity Processes in the Upper Ocean Regional Study (SPURS) campaign. The average conditions during STRASSE were low wind and high insolation, which are typical for the generation of near-surface diurnal warming. We deployed the Air-Sea Interaction Profiler (ASIP), an autonomous upwardly-rising microstructure instrument capable of resolving small-scale processes close to the air-sea interface. ASIP provides direct estimates of the dissipation rate of turbulent kinetic energy, temperature, salinity, and PAR at timescales suitable for the study of diurnal processes. In combination with the ASIP data, we had shipboard meteorological data for calculation of atmospheric forcing, and a surface mounted Lagrangian ADCP for determination of the near-surface velocity. There was a strong diurnal cycle of temperature and dissipation (from ASIP) and shear (from an ADCP). As air-sea fluxes are driven by turbulence immediately at the air-sea interface, the presence of this enhanced shear-induced turbulence will enhance fluxes.