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Small-scale upper ocean measurements during the Cirene campaign

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The Cirene campaign was conducted in the Indian Ocean at 67°E, 8°S on the R/V Suroît. It was a two leg experiment: 8th-28th January and 1st-20th February, 2007. One of the objectives of the Cirene cruise was to investigate the impact of air-sea fluxes and small-scale upper ocean processes on the large SST depressions associated with the active phase of the Madden–Julian oscillation. These large amplitude SST variability had been identified from the satellite TRMM Microwave Imager (TMI) SST dataset, and were particularly strong south of the equator in the Indian Ocean during northern hemisphere winter.

This presentation describes results from the Air-Sea Interaction Profiler (ASIP), an autonomous profiling instrument for upper ocean measurements. ASIP was deployed extensively during Cirene and was equipped with high-resolution sensors for temperature, salinity, light, and shear. We also present results from a series of temperature chain drifters, which were equipped with a series of self-recording thermometers over the upper 50 m. The drifters were deployed to monitor the detailed thermal structure of the mixed layer, the diurnal cycle of the SST and its spatial heterogeneity.