

Atmospheric cold pools and air-sea interaction in DYNAMO

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Atmospheric cold pools during the convectively active phase of the MJO increase the variability of wind and surface air temperature, and increase the depression of air temperature compared to SST. We objectively identify 229 cold pools in the Revelle cruise legs 2 and 3 of DYNAMO, and compute mean and turbulence covariances in the vicinity of each these events. Median wind stress and sensible heat flux doubles for 20 minutes following the cold pool front, much of the covariance being due to variability longer than 6 minutes. Near cold pool fronts anomalously strong wind gusts are disproportionately responsible for mean stress and heat flux. COARE bulk fluxes are consistent with turbulence fluxes. We compare the cold pool recovery time implied by the heat fluxes to the recovery time observed from the temperature time series.