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The effect of downstream location on the statistics of the surface temperature field for flow over an air/water interface[1] K. PETER JUDD, J.R. SAYLOR, Clemson University — Experiments were carried out in a wind/water tunnel with a wind speed sufficiently small that both free and forced convection occurred. Infrared (IR) imagery was used to characterize the surface temperature field of the water as it transferred heat to the overlaying air. The root mean square (rms) of the surface temperature was computed from the IR images that extended over a fixed footprint on the interface. The IR imagery was broken into segments. The rms computed from each segment was found to vary from segment-to-segment along the streamwise direction. This variation in rms with downstream position is reported for a range of heat fluxes and wind speeds. The effect of segment size on the rms versus heat flux behavior is also discussed.

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