

**P-III-6**

**Finding the true temperature of the ocean surface**

Elizabeth C. Kent<sup>1</sup>, Alexey Kaplan<sup>2</sup> and Peter K. Taylor<sup>1</sup>

1 - Southampton Oceanography Centre, UK

2 - Lamont-Doherty Earth Observatory, Palisades, NY, USA

E-mail: eck@soc.soton.ac.uk

Observations of Sea Surface Temperature (SST) made by merchant ships have been analysed to identify biases which depend on how the measurement was made. The analysis is complicated by the circular nature of the problem: biases in SST depend on the heat fluxes, which are calculated from the SST. The analysis method uses pairs of co-located SST observations obtained by different measurement techniques: one ship using an insulated bucket to measure the SST and the other reporting the temperature of the engine intake water. A simple physically based model is used to parameterise the expected difference between the two observations based on environmental conditions. In order to estimate the empirical coefficients in the model it is necessary to account for the error and correlation structure of the dataset. The results show climatologically significant biases in the night-time bucket-derived SST and provide information on interdecadal variations in SST bias.