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[Volume 11, Issue 4 \(April 1981\)](#)

Journal of Physical Oceanography

Article: pp. 457–465 | [Abstract](#) | [PDF \(671K\)](#)

Estimating Monthly Averaged Air-Sea Transfers of Heat and Momentum Using the Bulk Aerodynamic Method

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(Manuscript received August 15, 1980, in final form January 26, 1981)

DOI: 10.1175/1520-0485(1981)011<0457:EMAAST>2.0.CO;2

ABSTRACT

Air-sea transfers of sensible heat, latent heat and momentum are computed from 25 years of middle-latitude and subtropical ocean weather ship data in the North Atlantic and North Pacific using the bulk aerodynamic method. The results show that monthly averaged wind speeds, temperatures and humidities can be used to estimate the monthly averaged sensible and latent heat fluxes from the bulk aero-dynamic equations to within a relative error of $\sim 10\%$. The estimates of monthly averaged wind stress under the assumption of neutral stability are shown to be within $\sim 5\%$ of the monthly averaged non-neutral values.

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