



OAFlux Satellite-Based High-Resolution Analysis of Air-Sea Turbulent Heat, Moisture, and Momentum Fluxes

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The Objectively Analyzed air-sea Fluxes (OAFlux) project at the Woods Hole Oceanographic Institution has recently developed a new suite of products: the satellite-based high-resolution (HR) air-sea turbulent heat, moisture, and momentum fluxes over the global ocean from 1987 to the present. The OAFlux-HR fluxes are computed from the COARE bulk algorithm using air-sea variables (vector wind, near-surface humidity and temperature, and ocean surface temperature) derived from multiple satellite sensors and multiple missions. The vector wind time series are merged from 14 satellite sensors, including 4 scatterometers and 10 passive microwave radiometers. The near-surface humidity and temperature time series are retrieved from 11 satellite sensors, including 7 microwave imagers and 4 microwave sounders. The endeavor has greatly improved the depiction of the air-sea turbulent exchange on the frontal and meso-scales. The OAFlux-HR turbulent flux products are valuable datasets for a broad range of studies, including the study of the long-term change and variability in the ocean-surface forcing functions, quantification of the large-scale budgets of mass, heat, and freshwater, and assessing the role of the ocean in the change and variability of the Earth's climate.