

Reconstructed Gridded Product of Global Wind Field by Qscat/SeaWinds Data and its Application to Ocean -Atmosphere Interaction in the western North Pacific

Kunio Kutsuwada

School of Marine Science and Technology, Tokai University,

3-20-1, Orido, Shimizu, Shizuoka 424-8610, Japan

E-mail: kkutsu@scc.u-tokai.ac.jp

Tel.: +81-54-337-0196 / Fax : +81-54-336-1434

Abstract:

Gridded products of surface wind/wind stress vectors over the world ocean have been constructed using satellite scatterometer (Qscat/SeaWinds), and they are available as the Japanese Ocean Flux data sets with Use of Remote sensing Observation (J-OFURO) together with other parameters. Using the level 2B swath data with 12.5km resolution by the improved model function, we have reconstructed gridded product with higher spatial resolution. The products are validated by not only comparisons with in-situ measurement data by mooring buoys such as TAO/TRITON in the tropical Pacific and the Kuroshio Extension Observation (KEO) buoys, but also intercomparison with numerical weather prediction model (NWPM) products (the NCEP-1 and 2). Our products have much smaller mean difference in the study areas than the NWPM ones, meaning higher reliability compared with the NWPM products.

Using the wind products together with sea surface temperature (SST) data supplied by the RSS, we perform spatial correlation analyses between surface wind and SST anomaly fields in the western North Pacific region. Results reveal significant correlation between high wind-speed and high SST regions in the Kuroshio Extension (KE) region, suggesting the feature governed by the effect from the ocean to the atmosphere. It is suggested that this ocean-to-atmosphere interaction feature has some dependencies on oceanic condition in areas such as the existence of warm eddies.