

[Available Issues](#) | [Japanese](#)Author: [ADVANCED](#) | Volume Page Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > **Abstract**

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Validation of Gridded Surface Wind Products Using Spaceborne Wind Sensors and their Application to Air-Sea Interaction in the Extension Region

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Abstract

We have constructed gridded high resolution global surface wind products using scatterometer Qscat/ SeaWinds (QSW) and radiometer Aqua/AMR. A comparison of the two products in the North Pacific reveal significant differences. The differences are weaker than the QSW winds with a maximum difference of 0.5 m/s in the western portion of the westerly region during the winter season. The products were validated by comparing them with moored buoy measurements ; the

Observatory (KEO) buoy in the Kuroshio Extension (KE) and the ' and Ocean (TAO) buoys in the tropical Pacific regions. Comparison little differences between satellite-derived and in-situ wind speeds, ' has a smaller root-mean-square difference (RMSD) from and a high situ wind speeds, indicating higher reliability. Spatial correlations between speed and sea surface temperature (SST) anomaly fields by TRMM (TMI) reveal a significant positive correlation between wind-speed : KE region, suggesting an ocean-atmosphere interaction that may have oceanic conditions, such as the existence of warm eddies.

Keywords: [Surface Wind](#), [Gridded product](#), [Validation](#), [Buoy measurement](#), [Scatterometer](#)

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