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Numerical Estimation of Sea Surface Wind

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The air-sea interaction is one of important factors not only to determine the development of synoptic system at the Northeast Asia where the pacific jet is located but also to modulate the global climate system. Therefore, it has been required reasonable oceanic data including SST as well as meteorological data which can represent a detail meso-scale feature. SST can be observed from the satellites, however, meteorological data such as sea surface wind is not easily obtain, although QuikSCAT (Yeh et al. 2001).

Na et al. (1992) introduced a sea surface wind data with was estimated from the weather maps. However, it has provided only limited information in sense of temporal and spatial resolution. To overcome these limitations a numerical estimation has attempted. LAPS (Albers 1994) has been utilized to enhance the KMA GDAPS data (Lee et al. 1994) and NCEP reanalysis data (Kalnay et al. 1996) with various available observation data, such as data by automatic weather station, satellite, radar, and radiosonde, etc..

Finally the estimated sea surface wind field has been validated through comparison together with the satellite observation. As results, 6 hour integration with MM5 might be enough to reproduce meso-scale features in the sea surface wind field. Using this method, we can provide reasonable fine sea surface wind information near the Korean Peninsula for the period from 1978 to 1999.

Keywords: Meso-scale; Sea Surface Wind; Air-Sea Interaction; LAPS; MM5

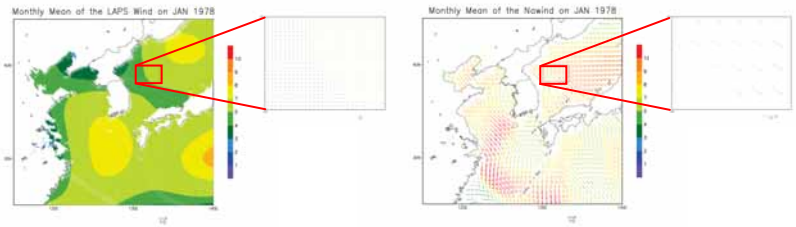

Figure 1. Estimated sea surface wind in this study and by Na et al. (1992)

References

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