

## Abstract

Ice velocity fields were derived on a daily basis using AVHRR satellite images over cloud-free regions. The Maximum Cross Correlation (MCC) method was used to generate the velocity field from a pair of images one day apart. Results from the MCC analysis were compared with the ice velocity field obtained from a mathematical model as described in Ikeda et al. (1996). The mathematical model requires the meteorological input obtained from the Nippon Meteorological Center. These input data include the wind, relative humidity, and the surface air temperature. Wind data were used in the model to calculate the wind-driven ocean current. Ice growth and its motion were then obtained for the given meteorological conditions and the calculated ocean current. The internal ice stress was modeled after Hibler (1979). This study covers two winters: 1990-91 and 1993-94. For each winter, the daily ice vector correlation between model and AVHRR results was calculated over the entire Sea of Okhotsk where ice velocity vectors were available. Additional correlations between ice velocities and the wind, ice velocities and the current, and their combined correlations were determined. This study suggests sources of discrepancies between model and satellite observed results. Future modifications to the model are proposed based on the present findings.

## Citation

Wang, Z., Shen, H.H., Shen, H.T., Ikeda, M., Weaver, J., and Heideman, J. (2000) "A Comparison of the ice velocity field in the Sea of Okhotsk from Model and Remote Sensing Results", Prof. 15<sup>TH</sup> Int. Symp. Okhotsk Sea & Sea Ice, Mombetsu, Hokkaido, Japan, Feb. 6-9 2000.