



Inter-comparison of sea ice concentration products over Arctic Ocean

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The Arctic environment responds sensitively to sea ice changes, and warming is accelerating faster than in other regions. Decreases in Arctic sea ice have an impact not only on the Arctic but also on the entire Earth, such as global warming. Studies of sea ice mainly use sea ice concentration (SIC). In this study, we compared and analyzed five different SIC data calculated from various algorithms. Bias analysis of daily SIC average showed 0.2-3.2% overall, and RMS analysis showed that the CDR and Bootstrap RMS difference was the lowest, and CDR and NASA Team RMS difference was the highest. Overall, CDR-Bootstrap was observed to have a 0.2% higher CDR SIC, and Bootstrap was higher in center of Arctic Ocean and the Bering Sea part. CDR-NASA Team had a 3.1% higher CDR SIC, with a relatively higher difference between the coastline and the East Greenland Sea. Spatial differences were also observed, which is considered to be due to differences in accuracy between the output sensors such as the coastline and low SIC. As a result of this study, it is possible to understand the correlation between the daily mean SIC data, but it is necessary to study the effect of regional/seasonal difference analysis and data difference on the climate model.