A new sea ice climate data record for climate studies

<u>Walter Meier</u>[†]; Florence Fetterer; Ruth Duerr; Donna Scott; Matthew Savoie; Sean Mallory [†] National Snow and Ice Data Center, USA Leading author: <u>walt@nsidc.org</u>

Sea ice is one of the most sensitive and visible indicators of changes in climate. Over the past three decades, Arctic sea ice has shown a significant decline, particularly in the summer, while the Antarctic has been characterized by large interannual variability and small increasing trends. Passive microwave remote sensing data provides one of the best records of sea ice because of its ongoing long record (since 1978), all-sky capabilities, and complete daily coverage of sea ice-covered waters. Several algorithms have been developed over the years to estimate concentration and extent from the passive microwave data. The algorithms generally agree on overall trends, but there are significant differences between products. The sea ice concentration products have not typically included detailed information on processing methods, data quality, or metadata. A new sea ice concentration product has been developed under the NOAA Climate Data Record program that addresses these deficiencies and provides a complete passive microwave sea ice concentration from a combined algorithm, along with file-level metadata and grid-cell level data quality estimates. A related project will expand the suite of sea ice climate data records to include ice motion, ice age, and visible/infrared products.