

## Evaluation of Arctic and Antarctic Sea Ice Extent between 1981 and 2012 using Satellite-derived data

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Sea Ice is a key element of the cryosphere, mainly due to its global influence on the heat and mass transfer processes. Its capacity of isolation restricts the mass and energy transfers between ocean and atmosphere, influences salinity and, by consequence, the density of the upper layers of the ocean, that can influence oceanic circulation and formation of deep waters. On the last decades, Arctic and Antarctic sea ice have presented very distinct tendencies in relation to variations in Sea Ice Extent. Arctic Sea Ice is retreating moves very fast, contrasting with the Antarctic sea ice, that presents a tendency of increase in almost of its regions. In this study, variations of the Arctic and Antarctic sea ice extent were analyzed using satellite-derived data. The data set used was NOAA Optimum Interpolation SST (O<sub>i</sub> SST), a global one degree latitude and longitude resolution data set. The results indicate a tendency of increase in the Antarctic Sea Ice, specially in the Ross and Weddell Seas, and a decrease in the extent on Bellingshausen and Amundsen Seas. In the years 2006 and 2012, maximums in the Sea Ice extent were observed in Antarctica. In contrast, Arctic Sea Ice presented a tendency of decrease and minimum extent records were observed in the years 2007 and 2012. This type of analysis is important because sea ice acts an important role in the thermal balance of the planet, restricting the vertical fluxes of heat between ocean and atmosphere and increasing the albedo, allowing an analysis of the feedback albedo sea ice mechanism that contributes greatly to the climatic changes

**Publication:**

American Geophysical Union, Spring Meeting 2013, abstract id. A31A-16

**Pub Date:**

May 2013

**Bibcode:**

2013AGUSM.A31A..16C

**Keywords:**

0750 CRYOSPHERE / Sea ice

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