

Why is the Antarctic growing while the Arctic is losing ice year after year?

- *Anomalous cold winds in some areas of the South Pole seems to be the most likely cause*
- *The extent of sea ice in the Antarctic reached record levels in 2014*
- *Simulations run on the MareNostrum supercomputer attempt to explain this puzzling phenomenon*

Barcelona 5 November 2015 - While the Arctic icefield is melting faster and faster, on the other side of the world Antarctic sea ice is expanding year after year. In September 2014, at the end of winter in the southern hemisphere, the surface area of Antarctic sea ice exceeded 20 million square kilometres, a record since reliable satellite measurements began in the late 1970s.

Simulations carried out by experts at Barcelona Supercomputing Center have analysed this phenomenon and concluded that an increase in cold winds in some areas of the South Pole appear to be the most likely cause of this intriguing phenomenon. The study is part of the report "Explaining Extreme Events from a Climate Perspective," which the US American Meteorological Society is launching today.

The study, led by François Massonet, a postdoctoral researcher at the University of Leuven and member of the Earth Sciences team at BSC, has found clear links between the areas where sea ice expanded in 2014 and an increase in cold winds to these areas. "Simulations and observations" -explains Massonet- "have allowed us to rule out other possible explanations and show that the most likely hypothesis is that these cold winds, originating from low-temperature areas, are the cause of the increase in ice in 2014". However, he stresses that "we must continue to investigate what causes these changes in wind patterns, and we still don't know whether the increase in Antarctic sea ice which has been recorded since the late 1970s is exceptional or part of a longer cycle".

Explaining Extreme Events of 2014 from a Climate Perspective

The article "The 2014 High Record of Antarctic Sea Ice Extent" is part of the report "Explaining Extreme Events of 2014 from a Climate Perspective" published today by the American Meteorological Society. The report analyses



how climate change may have affected the strength and likelihood of extreme weather events produced during 2014.

Barcelona Supercomputing Center

Barcelona Supercomputing Center (BSC) is the national supercomputing centre in Spain. BSC specialises in High Performance Computing (HPC) and its mission is two-fold: to provide infrastructure and supercomputing services to European scientists, and to generate knowledge and technology to transfer to business and society.

BSC is a Severo Ochoa Center of Excellence and a first level hosting member of the European research infrastructure PRACE (Partnership for Advanced Computing in Europe). BSC also manages the Spanish Supercomputing Network (RES).

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