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## Quantitative and Qualitative Analyzes of the Explosive Cyclones that Reached the Antarctic Coast in the First Half of 2017

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**Pires, L. B. M.; Romao, M.; Freitas, A. C. V.**

An explosive cyclone is a kind of extratropical cyclone which shows a drop in pressure of at least 24 hPa in 24 hours. These are usually intense and they have rapid displacement which hinders their predictability. It is likely that climate change is causing an increase in this type of event in the Antarctic coast and, if this increase is confirmed, the regime of winds and temperatures may be changing. If there are more incidences of explosive cyclones, probably the Antarctic winds are becoming more intense and the temperatures in some places are becoming lower and in others are becoming higher. In the northern portion of the Antarctic Peninsula a decrease in temperature already has been recorded over the last 15 years, while a higher incidence of explosive cyclones over the region also has been found during this period. Studies also have suggested that the drop in temperatures in the Antarctic may be associated with the changes in wind direction, but the cause of these wind direction changes is unknown. Explosive cyclones, which change the wind patterns when they reach certain areas therefore may be contributing to this change in the Antarctic climate. This study is part of the "Explosive Cyclones on the Antarctic Coast" (EXCANC) Project conducted by the World Environmental Conservancy organization. This project analyzes data from meteorological stations strategically scattered throughout the coast and operated by various international Antarctic programs, and also utilizes satellite images. Results show that during the first half of 2017 the highest number of events were recorded at the Australian Casey station with 10 cases, followed by the French station of Dumont D'Urville with 7 cases. Halley's English station recorded its first explosive cyclone this year. Intensity analyzes also are shown.

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