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## Antarctic climate response to large volcanic eruptions in the historical period

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Large tropical volcanic eruptions are well known to change the global climate and maybe even interfere with some natural modes of variability such as El Niño Southern Oscillation. As they inject a high amount of sulfur gas into the stratosphere, sulfate aerosol loading increases a few months after the eruption, which is then transported globally. Large tropical events may, therefore, affect extratropical climate variability. For example, temperature changes have been identified in Antarctica after the Pinatubo eruption in 1991, as warming in the peninsula. However, a causal link with the eruption and, more generally, a possible influence of large tropical volcanic eruptions on the Southern Hemisphere climate are still open questions. In this study we aim to focus on the five biggest eruptions of the historical period (Krakatau — Aug/1883, Santa María — Oct/1902, Mt Agung — Mar/1963, El Chichón — Apr/1982 and Pinatubo — Jun/1991) by assessing two CMIP6 class models (IPSL-CM6A-LR Large Ensemble and BESM) and two Reanalyses (NOAA 20th Century Reanalysis and ECMWF's ERA 20th Century).