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Direct north-south synchronization of abrupt climate change record in ice cores using Beryllium 10

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Abstract. A new, decadally resolved record of the ^{10}Be peak at 41 kyr from the EPICA Dome C ice core (Antarctica) is used to match it with the same peak in the GRIP ice core (Greenland). This permits a direct synchronisation of the climatic variations around this time period, independent of uncertainties related to the ice age-gas age difference in ice cores. Dansgaard-Oeschger event 10 is in the period of best synchronisation and is found to be coeval with an Antarctic temperature maximum. Simulations using a thermal bipolar seesaw model agree reasonably well with the observed relative climate chronology in these two cores. They also reproduce three Antarctic warming events observed between A1 and A2.

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