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Synchronous change of atmospheric CO_2 and Antarctic temperature during the last deglacial warming

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Understanding the role of atmospheric CO_2 concentration (hereafter aCO_2) during past climate warmings requires clear knowledge of how it varies in time relative to temperature. Antarctic ice cores preserve highly resolved records of aCO_2 and Antarctic temperature (AT) for the last 800 kyr. Here we propose a revised relative age scale between aCO_2 and AT for the last deglacial warming (Termination I, TI) using data from 5 Antarctic ice cores. We infer the phasing between aCO_2 and AT at four times when their trends change abruptly. We find no significant lead/lag, with a 1σ accuracy ranging from 160 yr to 90 yr, indicating that aCO_2 did not begin to rise hundreds of years after Antarctic temperature, as has been suggested by earlier studies.