



Atmospheric CO₂ change during Greenlandic stadials

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Reconstruction of atmospheric CO₂ during past abrupt climate change may help us better understand climate-carbon cycle feedbacks. Previous ice core studies revealed simultaneous increases in atmospheric CO₂ and Antarctic temperature during times when Greenland and the northern hemisphere experienced very long, cold stadial conditions during the last ice age. Whether this relationship extends to all of the numerous stadial events in the Greenland ice core record has not been clear. In order to investigate CO₂ variations during short stadials, we obtained a multi-decadal to centennial CO₂ record from Siple Dome ice core, Antarctica. Our new results cover the time interval of 22 to 41 ka. We find that CO₂ neither increases nor positively correlates with Antarctic warming during short stadial events, implying that the climate perturbation that produced the short stadials was not strong enough to substantially alter the carbon cycle.