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# A Deglacial Record of Carbon Dioxide from the WAIS Divide Ice Core, Antarctica

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Establishing the role of atmospheric $CO_2$ during the last deglaciation has important implications for deciphering the mechanisms associated with the transition from glacial to interglacial states. A precise, high-resolution record of atmospheric $CO_2$ is one essential milestone. Existing Antarctic ice core records have provided insight into both the timing of $CO_2$ changes and likely sources, but lack the temporal resolution to address some important problems. The WAIS Divide ice core has the potential to produce the highest resolution and most well dated $CO_2$ record for the last $\sim$60 ka, due to the high accumulation rate at the site (presently 20 cm/yr). This record will be key for understanding the timing and role of $CO_2$ changes during notable climatic intervals in the past (e.g. Antarctic Cold Reversal, Younger Dryas). Here we present a $CO_2$ record from WAIS Divide, Antarctica for the period 22,000 – 8,000 years BP. Preliminary data at $\sim$200 yr resolution are in general agreement with previous reconstructions of $CO_2$ during the last 20,000 years, and document the same general trends at millennial and longer scales. Additionally, several abrupt changes in both $CO_2$ and $CH_4$ occur synchronously throughout the core, which may provide insight into the mechanisms associated with those shifts. Given the small delta-age and excellent chronologic constraints for the WAIS Divide core, the $CO_2$ record will document variability at the centennial or shorter scale and thus we are currently measuring $CO_2$ at this resolution over critical transitions in the core (i.e. ACR), which we will also present at the meeting.