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Variations in Iron Fluxes across Antarctica: a new record from Talos Dome in Victoria Land, Antarctica.

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A new record of Iron (Fe) fluxes are presented from a coastal Antarctic site, Talos Dome. The Talos Dome ice core was drilled from 2005-2007, to a depth of 1620 m, covering more than 250 ky of climate variability. Iron fluxes at Talos Dome were consistently greater than at Dome C, particularly during interglacials when Talos Dome receives dust deflated from proximal ice-free areas. The 50-fold changes in Fe concentration variability over glacial-interglacial cycles, observed at Dome C, are not representative of deposition at this coastal site. Iron fluxes vary greatly from dust and calcium, which have been previously used as proxies for micronutrient deposition reconstructions. These differences in trace element fluxes across Antarctica are relevant for the reconstruction of Southern Ocean paleoproductivity and potential impacts on atmospheric CO_2 drawdown over glacial-interglacial timescales.