



Past and future polar amplification of climate change: climate model intercomparisons and ice-core constraints

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Climate model simulations available from the PMIP1, PMIP2 and CMIP intercomparison projects for past and future climate change simulations are examined in terms of polar temperature changes in comparison to global temperature changes. Those are simulations of the Last Glacial Maximum and Mid-Holocene climates (PMIP1 using atmospheric models, PMIP2, using coupled ocean-atmosphere models), preindustrial and modern climates, and 2x and 4x CO₂ climates (CMIP simulations). The variety of climate model sensitivities enables to explore the relative changes in polar temperature with respect to changes in global temperatures. It is remarkable that simulated changes of polar temperatures are strongly related to changes in simulated global temperatures for both future and past climates, confirming that ice-core-based reconstructions provide quantitative insights on global climate changes.