



Modelling of the sulfur cycle in Antarctica for a present-day and a glacial climate

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The study aims at better understanding the atmospheric sulfur (S) and its relation with climate. Sulfur in the Antarctic atmosphere is still nowadays largely dominated by its natural component. Antarctic ice cores provide constrains on the response of atmospheric sulfur to climate change. We use the LMDZ4 stretchable-grid Atmospheric General Circulation Model (AGCM) to evaluate the atmospheric circulation in the Antarctic region, both for present climate and the climate of the Last Glacial Maximum (LGM). An embedded transport and chemistry module is used to evaluate sulfur sources, distributions and deposition. Model results are compared with observations of present-days surface atmospheric and snow concentrations for present climate, ice cores data for the LGM climate. The importance of source, oxidation and deposition processes, and how they are accounted for in the model, will be discussed.