



Wet deposition and aqueous phase chemistry of trace gases and aerosols in clouds and precipitation: a global model study

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Wet deposition is not only an important direct sink in the budget of many trace gases and aerosol species, but often there is an indirect sink by significantly changing the concentrations of those species by interactions with clouds and precipitation. Due to computational constraints, these processes are usually highly parameterised in current global models.

In the current work a scheme for scavenging and chemical interactions has been developed which is applicable on a global scale. It takes into account the uptake of gaseous species and aerosol particles by nucleation and impaction scavenging and calculates the chemical processes (dissociation and oxidation reactions). The greatest advantage is that it is easily expandable without the necessity of any large modifications, making it suitable for various calculations.

First results will be presented showing the influence of cloud and precipitation chemistry, and how it improves the budget of trace species in the global chemistry climate model ECHAM5/MESSy.