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The importance of atmospheric acidity for nutrient deposition on global scale

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Atmospheric deposition can be an important source of nutrients and trace elements for land and ocean ecosystems. Atmospheric acidity is an important driver of the solubility of nutrients and trace elements present in atmospheric aerosols. Using a global 3-dimensional chemical transport model, we summarize here human driven past and future changes in the aerosol acidity and the resulting changes in the nitrogen, phosphorus and iron atmospheric deposition and solubility. We present and discuss the acidity driven changes in the chemical speciation and geographic patterns of nutrient deposition. Areas of uncertainties and implications for ecosystems functioning are discussed.

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