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Possibility of determining predominant SO₂ oxidation pathways by isotope fractionation or source apportionment

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Sulfur dioxide oxidation and the effect of oxidation products in formation and growth of aerosols have been studied widely. Despite this, significant gaps still exist in understanding the SO₂ oxidation pathways in various locations. A study of SO₂ and aerosol sulphate downwind of the oil sands region was conducted as part of the FOSSILIS campaign in the summer 2013. Size segregated aerosols have been collected using a high volume sampler. Sulphate concentration in different size ranges has been determined and isotopic analysis has been performed to determine whether isotope fractionation or source apportionment can be used to identify secondary aerosols and to determine predominant SO₂ oxidation pathways in oil sands region.

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