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Title: Rapid aqueous phase SO₂ oxidation during winter fog in the Indo-Gangetic Plain

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Abstract: This study provides a report on SO₂ measurements from IISER Mohali – Ambient Air Quality Station. We use strong point sources of SO₂ within the region with known SO₂/CO emission ratio for industries 50 km east of our measurement site respectively, to estimate the loss rate of SO₂ in wintertime fog in the Indo Gangetic Plain (IGP). The observed loss rate of SO₂ is faster than the maximum loss rate through oxidation by H₂O₂, OH and O₃ in the aqueous phase. Models including TMI and Criegee Intermediates may be able to explain the observed loss rates as the pollution plume studied originates from metal industries.

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