

## **Abstract**

This study provides a report on SO<sub>2</sub> measurements from IISER Mohali – Ambient Air Quality Station. We use strong point sources of SO<sub>2</sub> within the region with known SO<sub>2</sub>/CO emission ratio for industries 50 km east of our measurement site respectively, to estimate the loss rate of SO<sub>2</sub> in wintertime fog in the Indo Gangetic Plain (IGP). The observed loss rate of SO<sub>2</sub> is faster than the maximum loss rate through oxidation by H<sub>2</sub>O<sub>2</sub>, OH and O<sub>3</sub> 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.