

ABSTRACT

Sulphur dioxide is an air pollutant that is emitted into atmosphere from both natural and anthropogenic sources. It is important to study and identify the sources of SO₂ since it has a huge impact on our climate. The sulphate aerosol which is formed by the oxidation of SO₂ has a radiative forcing of -0.4 Wm⁻² and it results in a decrease in Earth's energy budget and thus brings a cooling effect. Lu et al., casts doubt on the surface measurements of SO₂ in India because SO₂ levels have been reported to decrease at most Central Pollution Control Board (CPCB) monitoring sites after the introduction of sulphur free fuels while satellite observations provided evidence for an increasing SO₂ column over many regions. Here we address the aforementioned discrepancy in the SO₂ emission trend using in-situ SO₂ and meteorological dataset measured at a sub-urban site in the North-West Indo- Gangetic Plain during 2015. We also seek to identify the major sources of SO₂ over this region. The strongest sources of SO₂ measured at our site were found to be the three coal fired power plants located in the North-West, South-East and South-West directions and there was a minor contribution from traffic as well.