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Monitoring Seasonal Variations of Tropospheric Carbon Monoxide (CO) using Satellite Remote Sensing Datasets

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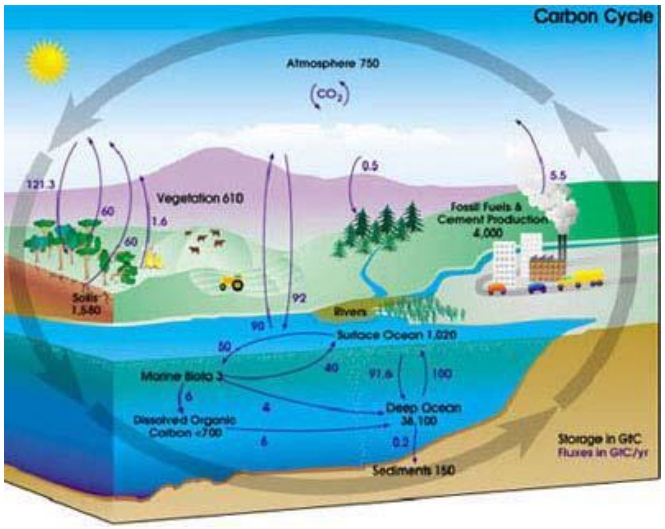
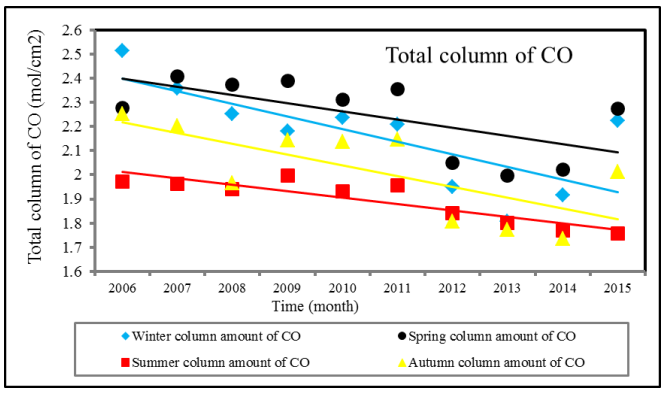
Graphical Abstract



Carbon Cycle



Seasonal climatological trend of CO

Abstract.

In India emissions of gaseous pollutants increasing day by day due to rapidly growth in industrialization, population density and urbanization. In this study, we present the annual and seasonal variations of carbon monoxide (CO) concentration over India region from 2006-2015 using satellite remote sensing dataset from the sources Atmospheric Infrared Sounder (AIRS). In this study we analyzed the spatio-temporal variations of gases and their seasonal behaviors i.e., monthly, seasonal, annual mean variations of trace gases and also trend analysis of CO gases and comparison of the seasonal behavior of the CO gases by trend analysis were assessed. The highest column amount of CO emission was observed in east-to-western part of India region due to fossil- and bio- fuel combustions, biomass burning, smoke and industrial process and oxidation of methane. In this study we also examine the seasonal yearly variations, increment and decrement of CO concentrations over the selected eleven different cities of India region by considering 2006 as a base year and propose the behaviors of gases during (2007-2015). In India maximum CO emission noticed in the immensely populated states of Uttar Pradesh, Bihar and West Bengal,

	where usage of fuel wood burning and bio-fuel is predicted to be acute for domestic purpose as in rural areas, 80% of population lives. **Keywords:** *Carbon monoxide; AIRS; Seasonal variations; Remote sensing*

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Links

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[2] http://disc.sci.gsfc.nasa.gov/datacollection/AIRX3STM_V005.html.

[3] http://www.merriamwebster.com/dictionary/season.

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