

## ***Interactive comment on “Seasonal and diurnal variations of methane and carbon dioxide in the Kathmandu Valley in the foothills of the central Himalaya” by Khadak Singh Mahata et al.***

### **Anonymous Referee #1**

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General comments: Atmospheric greenhouse gases (GHGs) such as CO<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub>O and CO are important climate forcing agents having significant impacts on climate system and air quality. This study brings out first continuous measurements of atmospheric GHGs using high precision cavity ring down spectrometer (Picarro 24G2401, USA) at Kathmandu Valley during March 2013 to March 2014. The authors have done an extensive study on GHGs variability with time and space. However, there are a few minor technical changes in the manuscript. This paper is recommended to publish in ACP after incorporating the minor technical corrections. Line 18-20: This paper studies about GHGs and GHGs are not classified as pollutants especially CO<sub>2</sub> and CH<sub>4</sub>. Impact of pollution on GHGs needs to be emphasized not to refer GHGs as

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pollutants. Also sentence “This paper reports... May be re-written Line51-53: Not clear. Authos may please check the sentence. “ All three species showed strong diurnal and saying immediately CH<sub>4</sub> and CO did not show any variation...May be provided quantitative numbers. Line139: Rupakheti et al., 2016 need to be updated if available Line252: Sentence “The % may be written as Difference (%) of the analyzer differed by... Line349: Units of GHGs and other gases should be uniform in the manuscript. Line395-396: Impact of rainfall on CO<sub>2</sub> dilution process may be supported with reference Mahesh et al., 2014 “Impact of land-sea breeze... Line432-433: Please check the statement that CO<sub>2</sub> will be high but CH<sub>4</sub> will be high during post-monsoon season. Figure4: Titled should be changed. Since GHGs are not pollutants and legend should be CH<sub>4</sub> not Ch<sub>4</sub> Figure11: Show double Y-axis for better visualisation

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/acp-2016-1136/acp-2016-1136-RC1-supplement.pdf>

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