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## ***Interactive comment on “Black carbon emissions from Russian diesel sources: case study of Murmansk” by M. Evans et al.***

**Anonymous Referee #2**

Received and published: 28 May 2015

General comment

The paper presents an emission inventory, limited to diesel sources, of black carbon in the Murmansk region and some insights are given for this kind of emissions in Russia. For road transport emissions, multiple approaches have been used. Some sources were investigated using survey data and some other using more standard generalist approaches based on statistical large scale data (for example fuel consumption). The analysis is essentially an emission inventory and no new methodologies are actually employed nor are reported applications of this database. However, given that there is a certain lack of data in this region and its importance for climate change aspects, I believe that this analysis is interesting and suitable for the Journal. The paper is generally well written, however, it could be improved in a few aspects mentioned in

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my specific comments. Therefore, I believe that the paper could be considered for publication after a revision that addresses my specific points.

### Specific comments

1) The analysis does not include emissions associated to military and commercial ships saying that this are sensitive data. I can understand this for military ships but I do not believe that data of commercial and passenger ships are very sensitive. There are several emissions inventories for harbours in different parts of the world. Therefore, I believe that on this aspect something more could be actually done also for Murmansk region.

2) The emissions of road-transport calculated from the surveys are significantly different from those calculated by the registry of vehicles. It is reported that the registry has been somewhat corrected. Do you mean in terms of the total number of vehicles or in the fractions associated with the different categories (Cars, LDV, etc.) or in the emission quality (Euro 0, Euro 1 and so on). Probably it would be better to include this info in Table S5 (and/or S6) of the supplementary material.

3) It is not clear if these corrections were also applied to road-transport in Murmansk region (Table 5) because I believe that a similar overestimation will be present also at this level. Will it be possible to use the same correction factors for all the region?

4) In table 3, the first three columns are from the surveys and the last one from the uncorrected registry. Is this right?

5) Page 3274 (line 5 in Section 10). Please correct “form” with “from”.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 3257, 2015.

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