

Reviewer comment:

The methodical part of the back trajectory analysis in section 3 is still insufficient. There is very little or almost no information given how exactly the back trajectories are used for calculation of the immission maps. It seems that the emissions were summed up all along the trajectory without taking the height of the trajectory into account or whether the air parcel had contact with the PBL and a chance to pick up emissions or not. Although I am not an expert on back trajectory analysis, I would consider this issue very essential for the paper. For linking emissions with concentration maps (immission maps) only emissions from grid cells where the back trajectory was close to the ground should be considered. If this is not the case here, I would have doubts regarding the validity and the usefulness of the calculated immission maps and consequently of the key messages of this paper. So it is in my view crucial that the applied back trajectory analysis has been done correctly. This must be demonstrated by a more detailed and convincing description of the applied method.

Response:

We fully agree with the reviewer as to the missing crucial information about our use of the trajectories. We are very sorry that this information somehow got lost in the course of our revisions. It was maintained though in the caption to the maps.

We now complemented section 3 with the crucial sentence:

“In the immission maps constructed with extrapolated measurements at the stations and in any comparisons with emissions along the back trajectories only trajectory points under 1000 m altitude above ground were utilized. “