

Interactive comment on “Attributing and quantifying European carbon monoxide sources affecting the Eastern Mediterranean: a combined satellite, modelling, and synoptic analysis study” by R. Drori et al.

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We would like to thank the reviewer for his useful comments.

General remark: The paper was rewritten and several sections were added. As the reviewers pointed up the model is not able to reproduce the synoptic scale variation except for summer months. Therefore the paper was divided into two parts. The first part dealing with the model result on large spatial and temporal scale evaluating the results on monthly basis and synoptic scale (deseasonalizing) and some budget analysis. The

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second part, focused on summer months, and characterizing the synoptic configuration leading to contribution from a specific location, and assessing the contribution from BB.

The “double deep”. This feature is evident when looking on the monthly averages of each year and even on the monthly average of all 15 measurement years (Fig 1). The same is true for the model. MOPITT retrievals do not show the same pattern, probably due to their coarse vertical resolution.

A full section on MOPITT retrievals was added to clarify the difference between them and flask measurements.

Comparing GMD to MOPITT. Generally this is a good idea. Unfortunately MOPITT V4 retrievals are not sensitive to the surface and therefore convolving it with the averaging kernel and a priori data will fall back to the a priori. This comparison was omitted. A section discussing MOPITT sensitivity to the lower troposphere was added.

A section on synoptic scale variability was added (section 8). Analysis was made for 4 months and have shown an association between synoptic configuration (two systems: over Europe and the EM) and air masses arriving the EM.

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