Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2017-787-AC1, 2018

Atmospheric Chemistry and Physics Discussions

ACPD

Interactive comment

Interactive comment on "A multi-model comparison of meteorological drivers of surface ozone over Europe" *by* Noelia Otero et al.

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Received and published: 18 May 2018

Since the initial submission of the manuscript (August 2017), the ongoing EURODELTA Trend exercise has delivered new data provided by specific working groups. Therefore, we have updated the data for the model MATCH, which has fixed a bug in emissions and improved its wet scavenging parameterization. In addition, further analyses of the WRFChem runs revealed inconsistencies in the model step-up affecting other variables and consequently the surface ozone performance, resulting in the exclusion of those runs from the EURODELTA exercise. Therefore, we have decided to also exclude the WRF-Chem model from our analysis. Neither of these two changes significantly influences the results and the final message presented in this study. However, to reflect this update, minor modifications to the manuscript and the supplementary material will

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be required in a small number of places. The corresponding line numbers as well as the revised figures are detailed below. Line numbers refer to the current online discussion version of the manuscript.

Lines 137-142, 144-146 will be removed.

Line 265 will be changed

Lines 282,283 will be removed

Lines 292-297, 298-301 will be removed

Lines 430,431 will be changed

Lines 441,442 will be removed

Lines 469,472 will be removed

Lines 473,474 will be changed

Line 491 will be changed

Line 503 will be changed

Lines 538-540 will be removed

Lines 549-552 will be removed

Lines 606,607 will be removed

Line 615 will be modified

Line 740 will be changed

Please also note the supplement to this comment:
https://www.atmos-chem-phys-discuss.net/acp-2017-787/acp-2017-787-AC1-supplement.pdf

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Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2017-787, 2018.

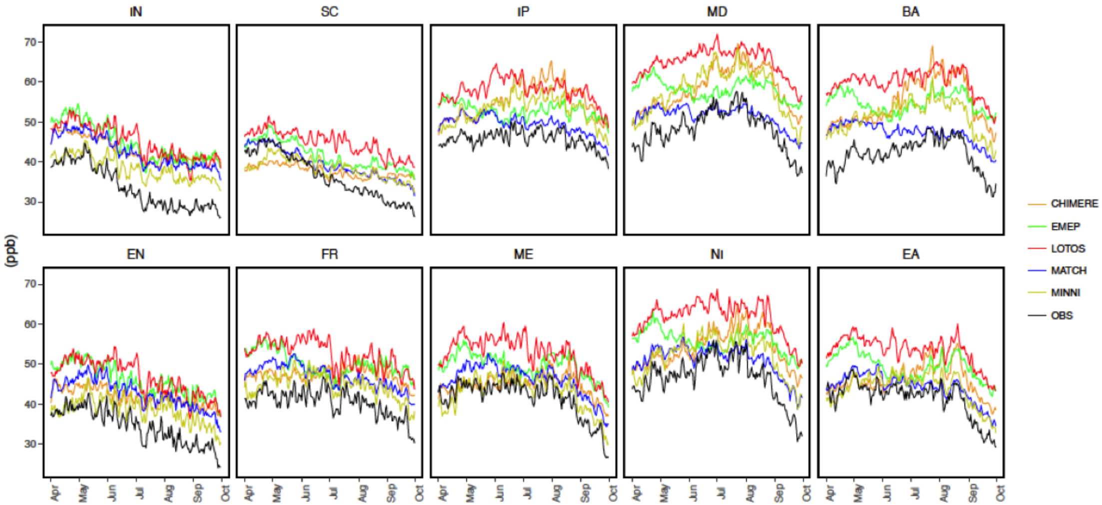

Fig. 1. Time series of daily averages of MDA8 O3during the ozone season (April-September) for the period of study (2000-2010) at each subregion.

Fig. 2. Correlation coefficients between observed and modelled MDA8 O3for spring (AMJ) and summer (JAS) for the period of study (2000-2010) at each region (rows) and models (columns, ordered by highest cor.)

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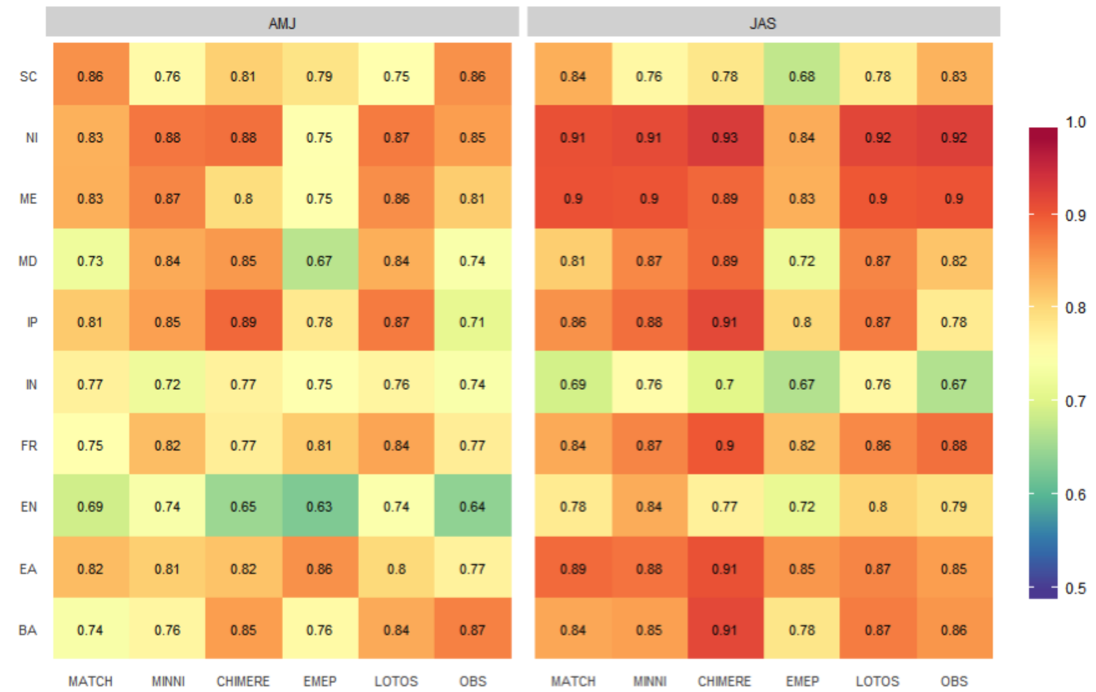

Fig. 3. Coefficients of determination (R2) for each CTM-based (ordered as in Fig.3) and observation-based MLR in spring (AMJ) and summer (JAS).

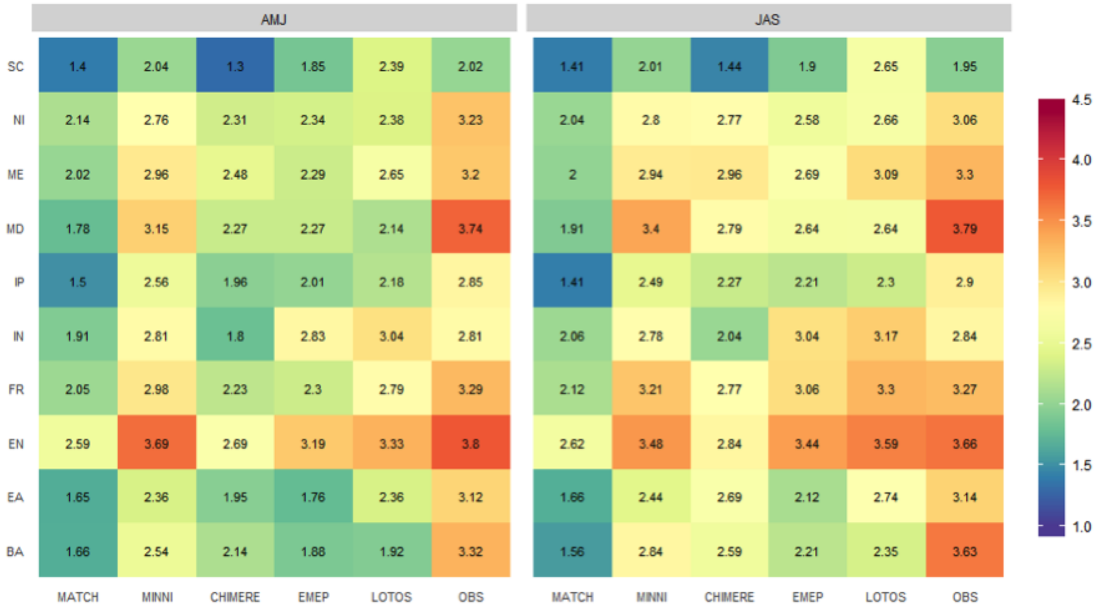

Fig. 4. Root mean square errors (RMSE) for each CTM-based (ordered as in Fig.3) and observation-based MLR at each region, in spring (AMJ) and summer (JAS).

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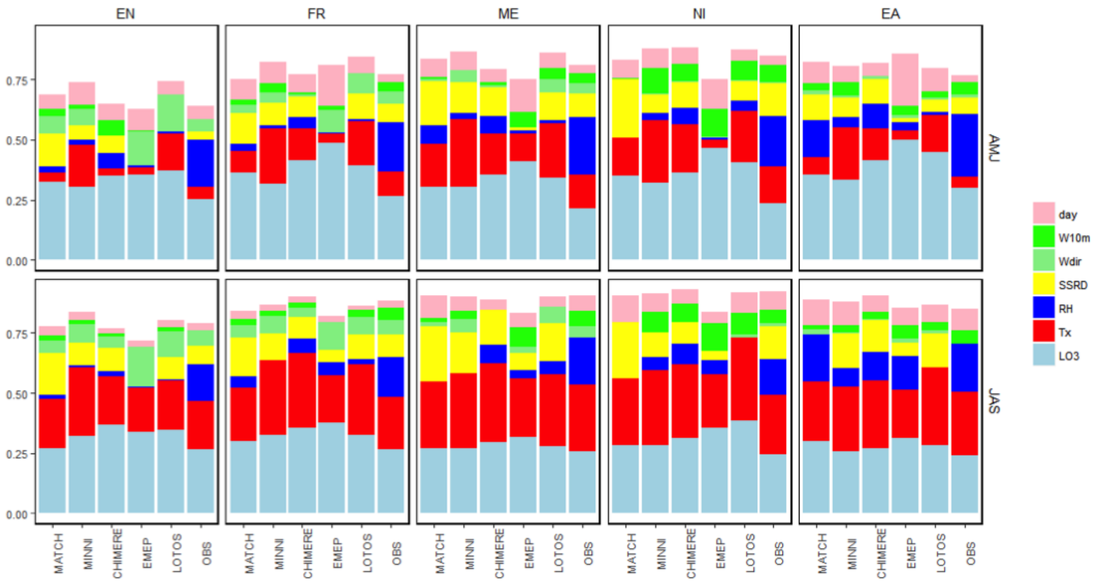

Fig. 5. Proportion of each predictor to the total explained variance for each CTM-based (ordered as in Fig.3) and observation-based MLR in AMJ (top) and JAS (bottom) for the internal regions.

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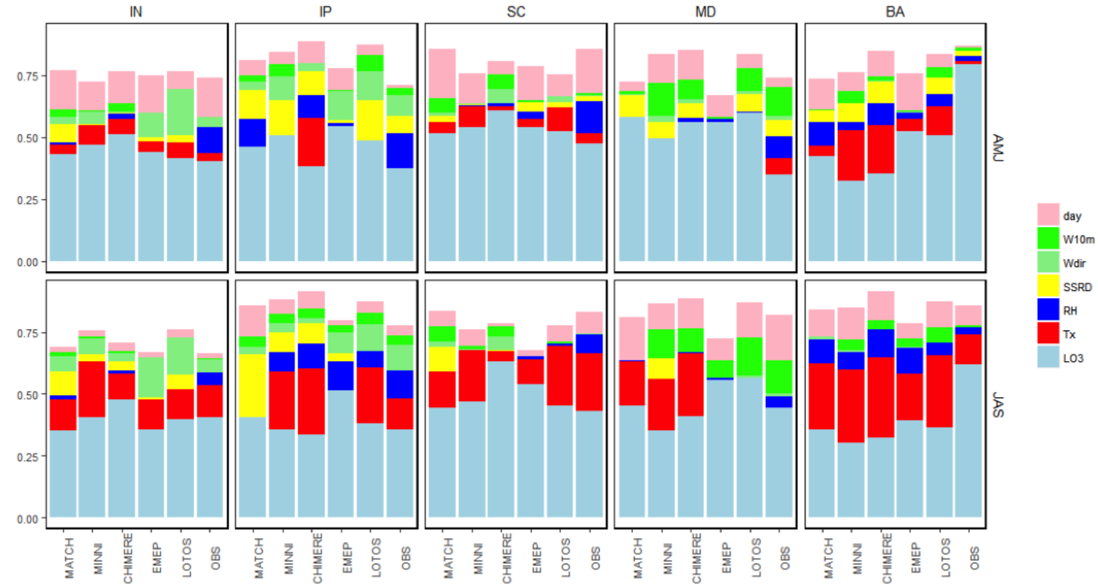

Fig. 6. Proportion of each predictor to the total explained variance for each CTM-based (ordered as in Fig.3) and observation-based MLR in AMJ (top) and JAS (bottom) for the external regions.

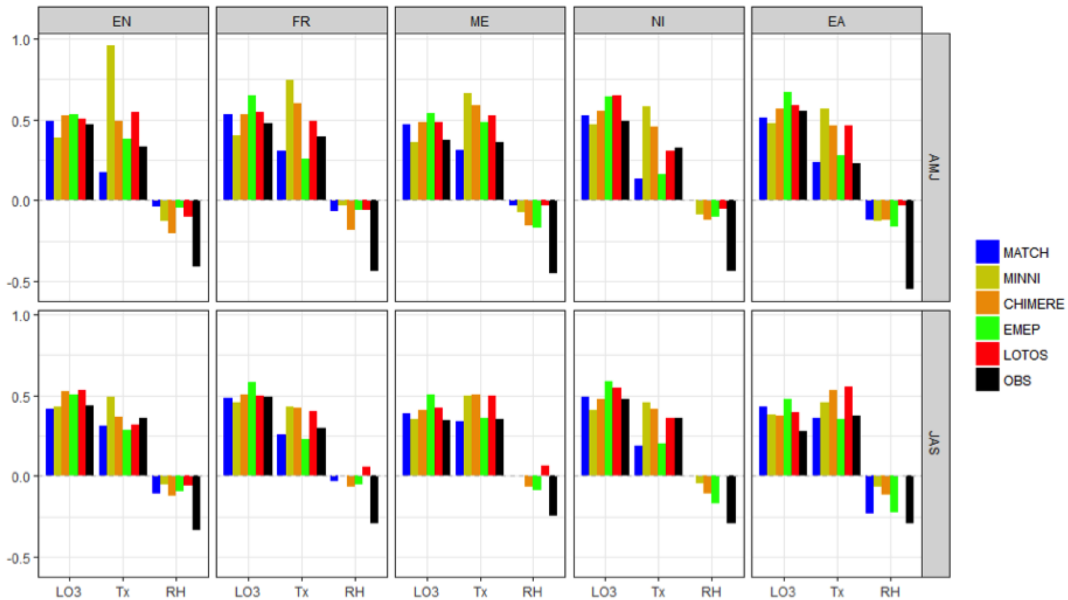

Fig. 7. Standardised coefficients values of the main key-driving factors (LO3, Tx and RH) for each CTMbased (ordered as in Fig.3) and observation-based MLR in AMJ and JAS for the internal regions.

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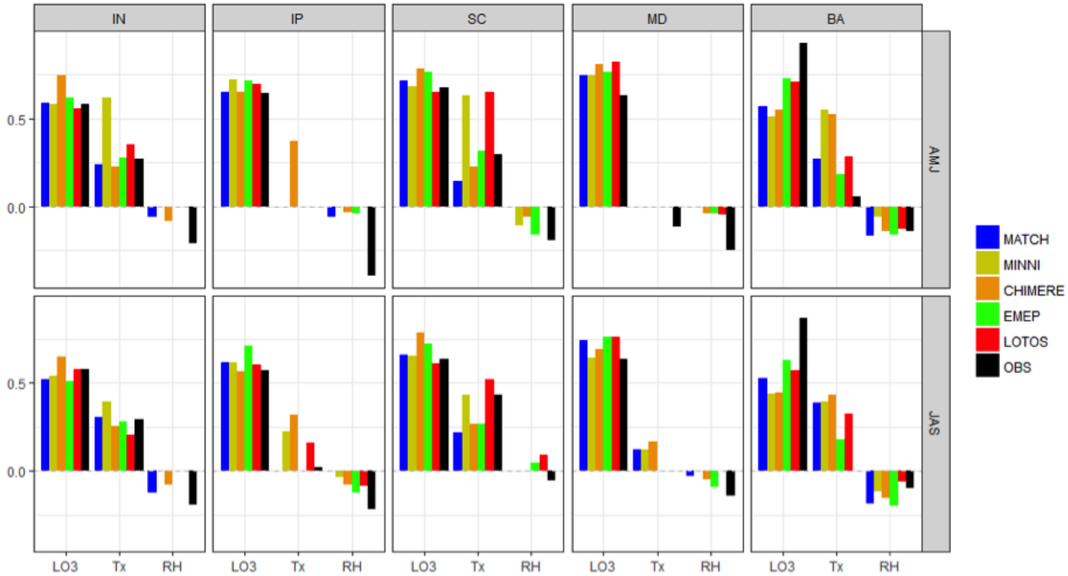

Fig. 8. Standardised coefficients values of the main key-driving factors (LO3, Tx and RH) for each CTMbased (ordered as in Fig.3) and observation-based MLR in AMJ and JAS and for the external regions.

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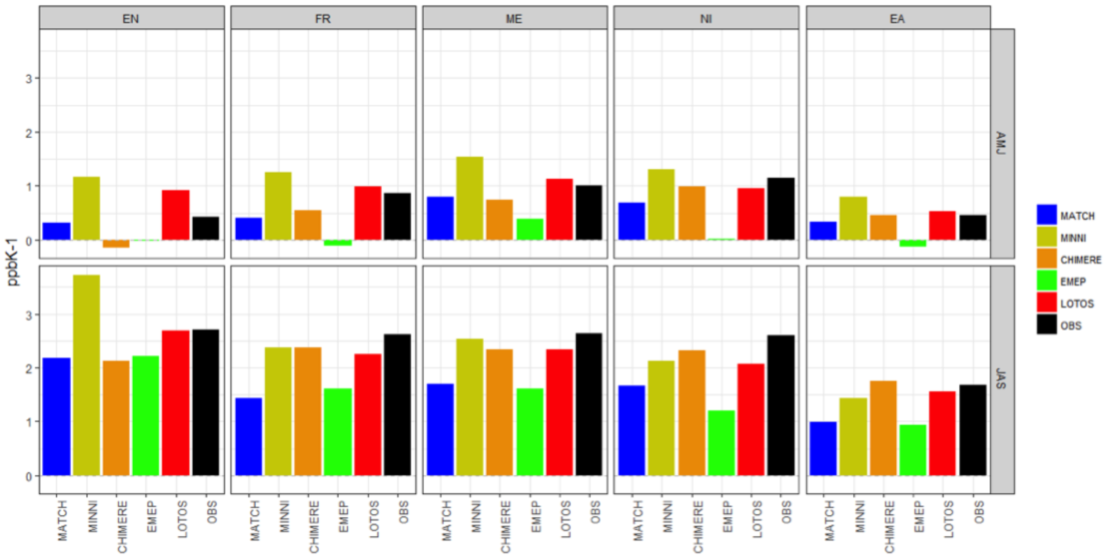

Fig. 9. Slopes (mO3-T; ppbK-1) obtained from a simple linear regression to estimate the relationship ozonetemperature for each CTM-based and observation-based MLR in AMJ and JAS for the internal regions.

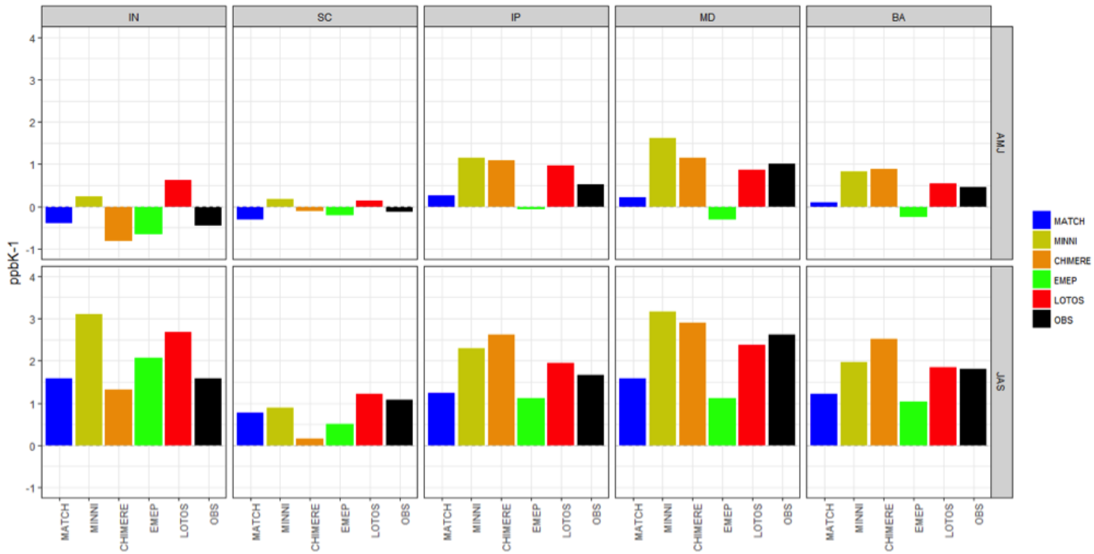

Fig. 10. Slopes (mO3-T; ppbK-1) obtained from a simple linear regression to estimate the relationship ozonetemperature for each CTM-based and observation-based MLR in AMJ and JAS for the external regions

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