Supplementary material to:
An inter-comparison of tropospheric ozone reanalysis products from CAMS, CAMS-Interim, TCR-1 and TCR-2

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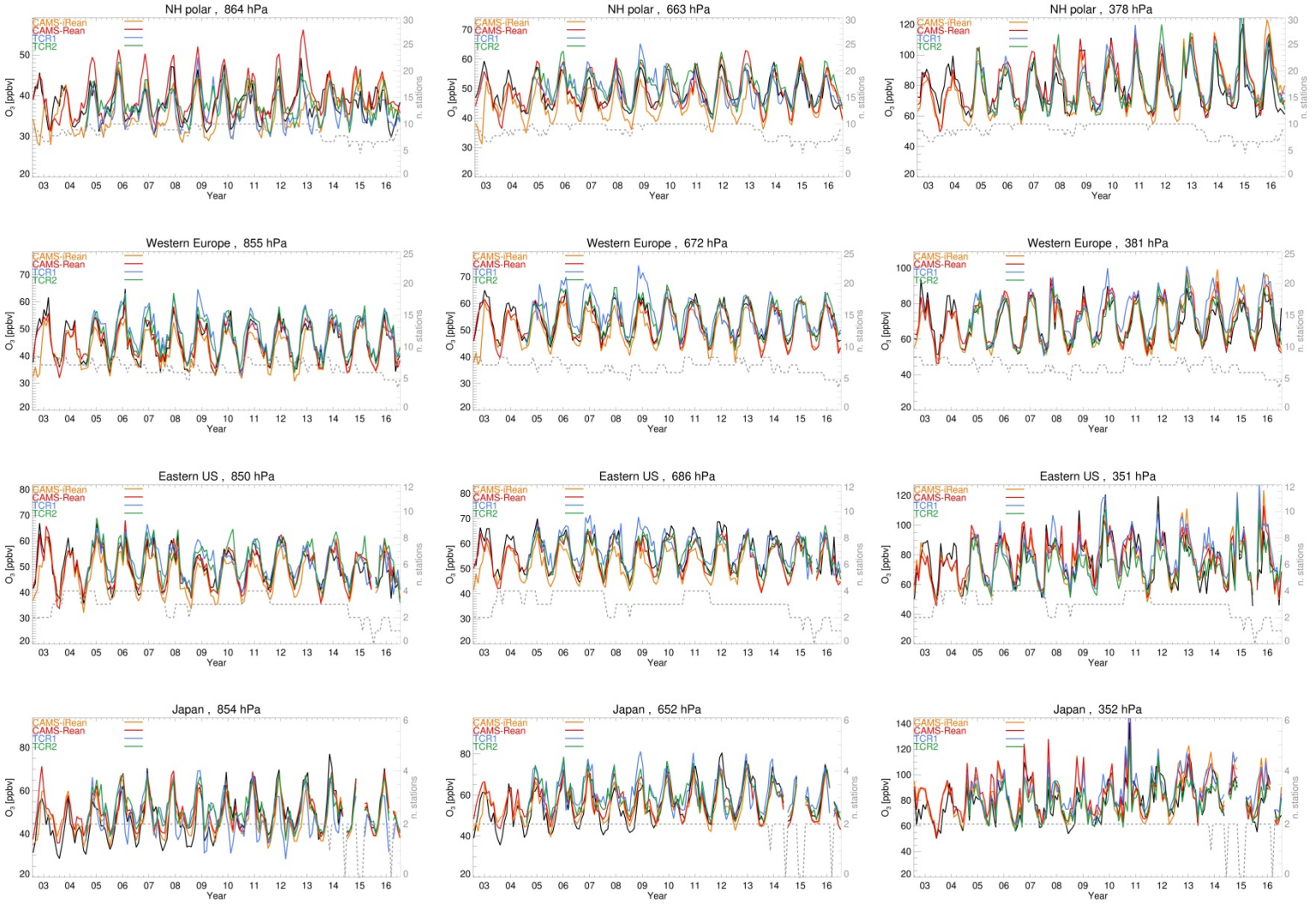

NH polar , 864 hPa
NH polar , 663 hPa
NH polar , 378 hPa
Western Europe , 855 hPa
Western Europe , 672 hPa
Western Europe , 381 hPa
Eastern US , 850 hPa
Eastern US , 686 hPa
Eastern US , 351 hPa
Japan , 854 hPa
Japan , 652 hPa
Japan , 352 hPa
CAMS-iRean
CAMS-Rean
TCR1
TCR2
O3 [ppbv]
n. stations
Year

20

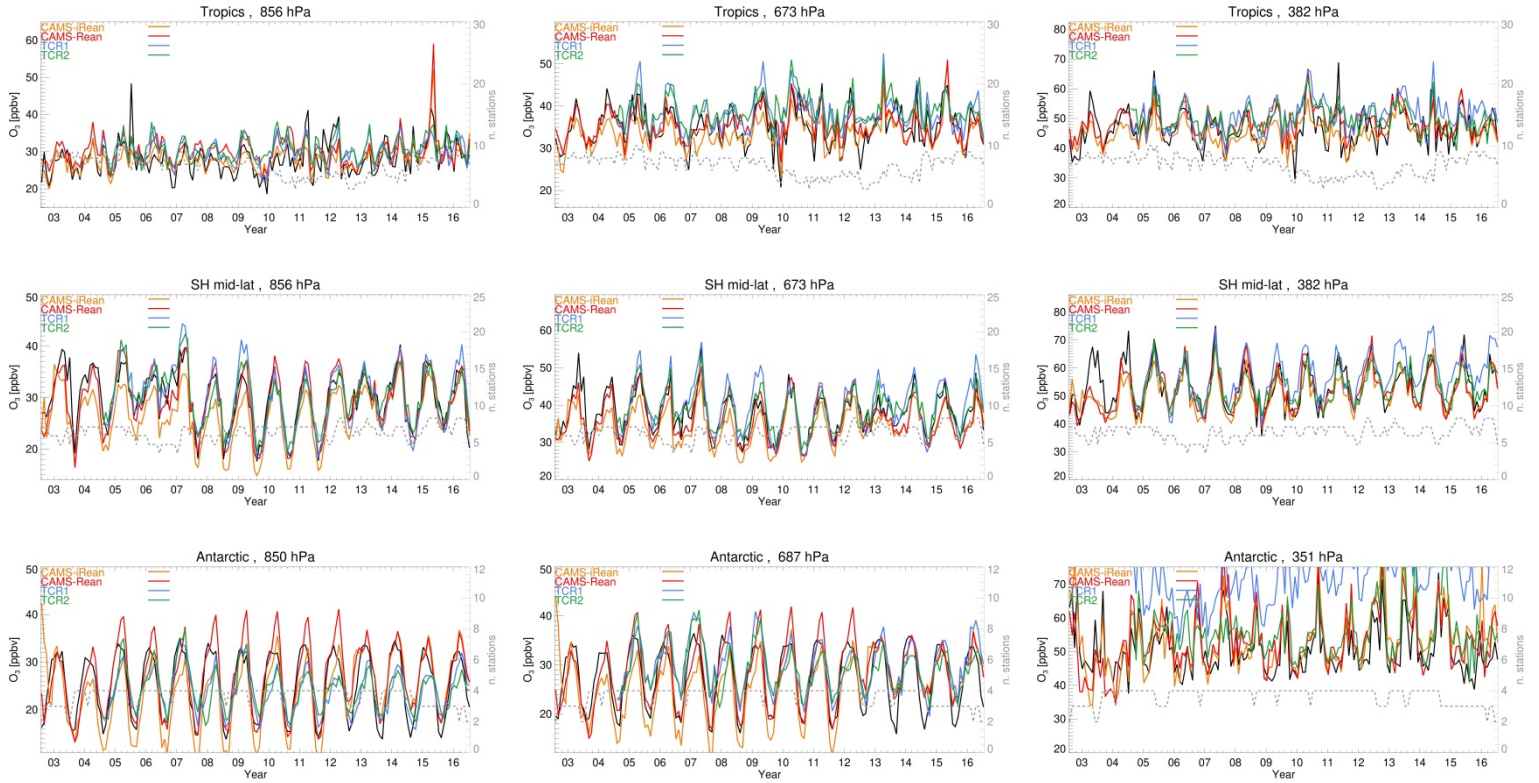
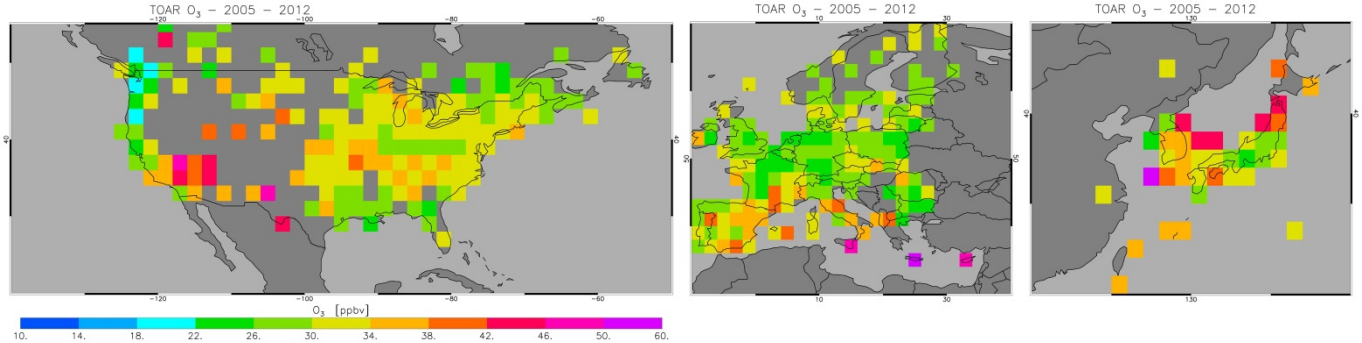
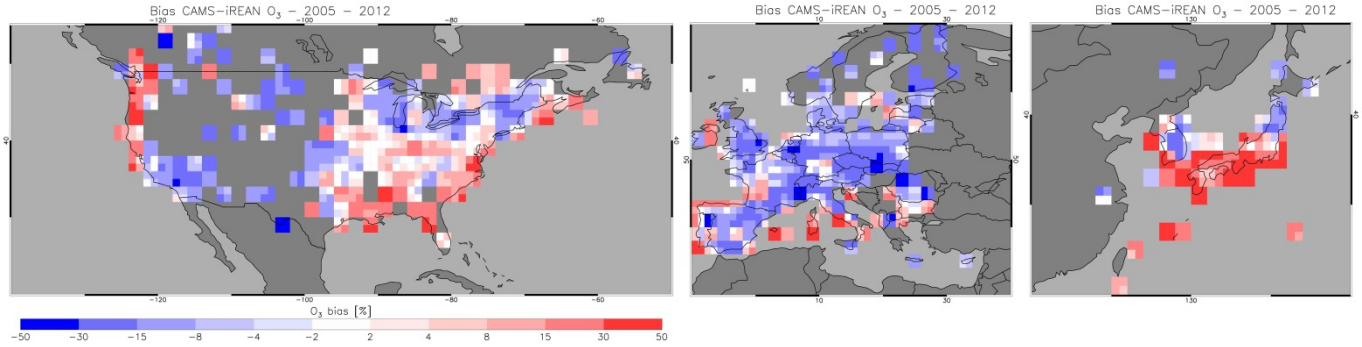
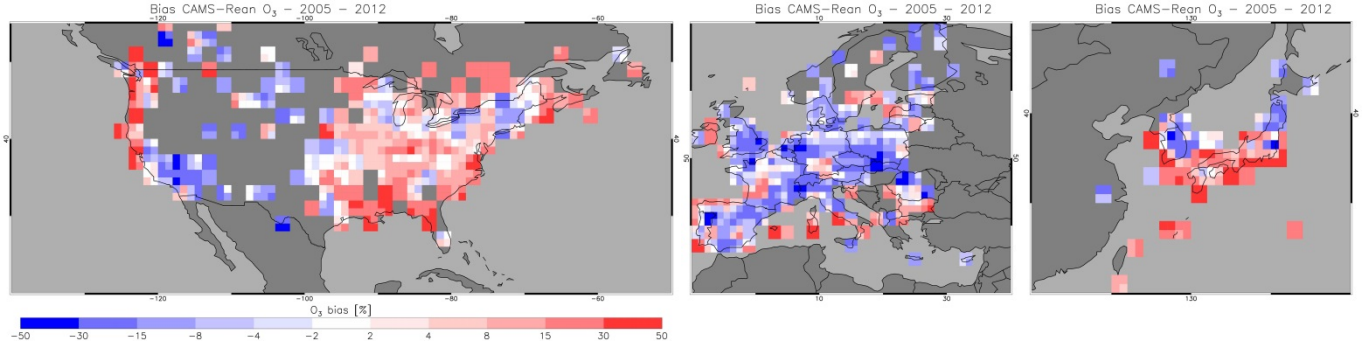


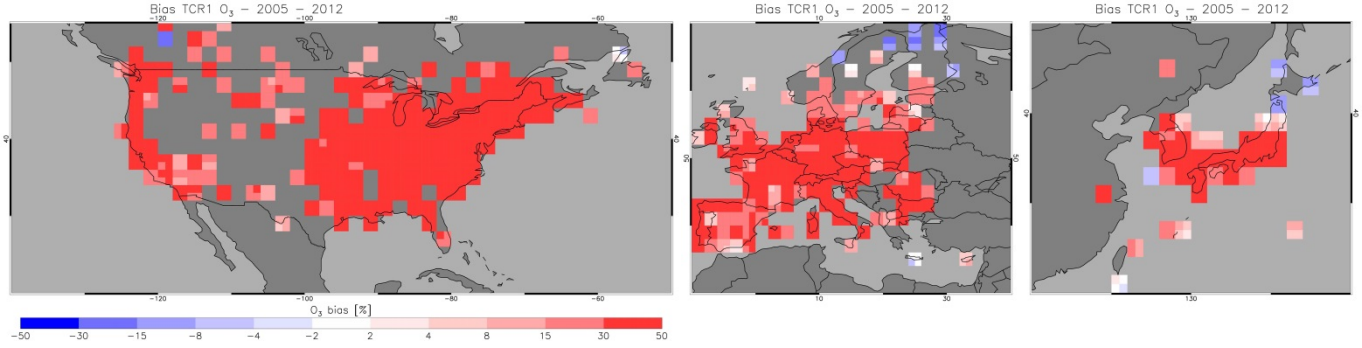
Figure S1. Time series of regionally and monthly aggregated ozone concentrations at different altitudes (850, 650 and 350 hPa), sampled at ozone sonde locations, against ozone sonde observations (black).


TOAR O_3 – 2005 – 2012
TOAR O_3 – 2005 – 2012
TOAR O_3 – 2005 – 2012
O_3 [ppbv]
10. 14. 18. 22. 26. 30. 34. 38. 42. 46. 50. 60.


Bias CAMS–iREAN O_3 – 2005 – 2012
Bias CAMS–iREAN O_3 – 2005 – 2012
Bias CAMS–iREAN O_3 – 2005 – 2012
O_3 bias [%]
−50 −30 −15 −8 −4 −2 2 4 8 15 30 50

30


Bias CAMS–Rean O_3 – 2005 – 2012
Bias CAMS–Rean O_3 – 2005 – 2012
Bias CAMS–Rean O_3 – 2005 – 2012
O_3 bias [%]
−50 −30 −15 −8 −4 −2 2 4 8 15 30 50


Bias TCR1 O_3 – 2005 – 2012
Bias TCR1 O_3 – 2005 – 2012
Bias TCR1 O_3 – 2005 – 2012
O_3 bias [%]
−50 −30 −15 −8 −4 −2 2 4 8 15 30 50

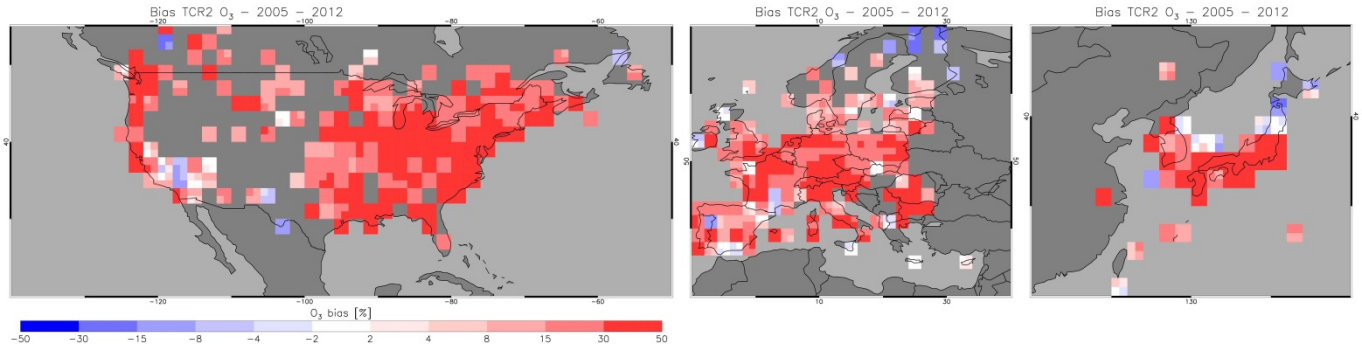


Figure S2: Multi-annual (2005-2012) mean surface ozone from TOAR for three regions, (top figures), along with corresponding relative mean bias for the reanalyses CAMS-iREAN, CAMS-REAN, TCR1 and TCR2, respectively.

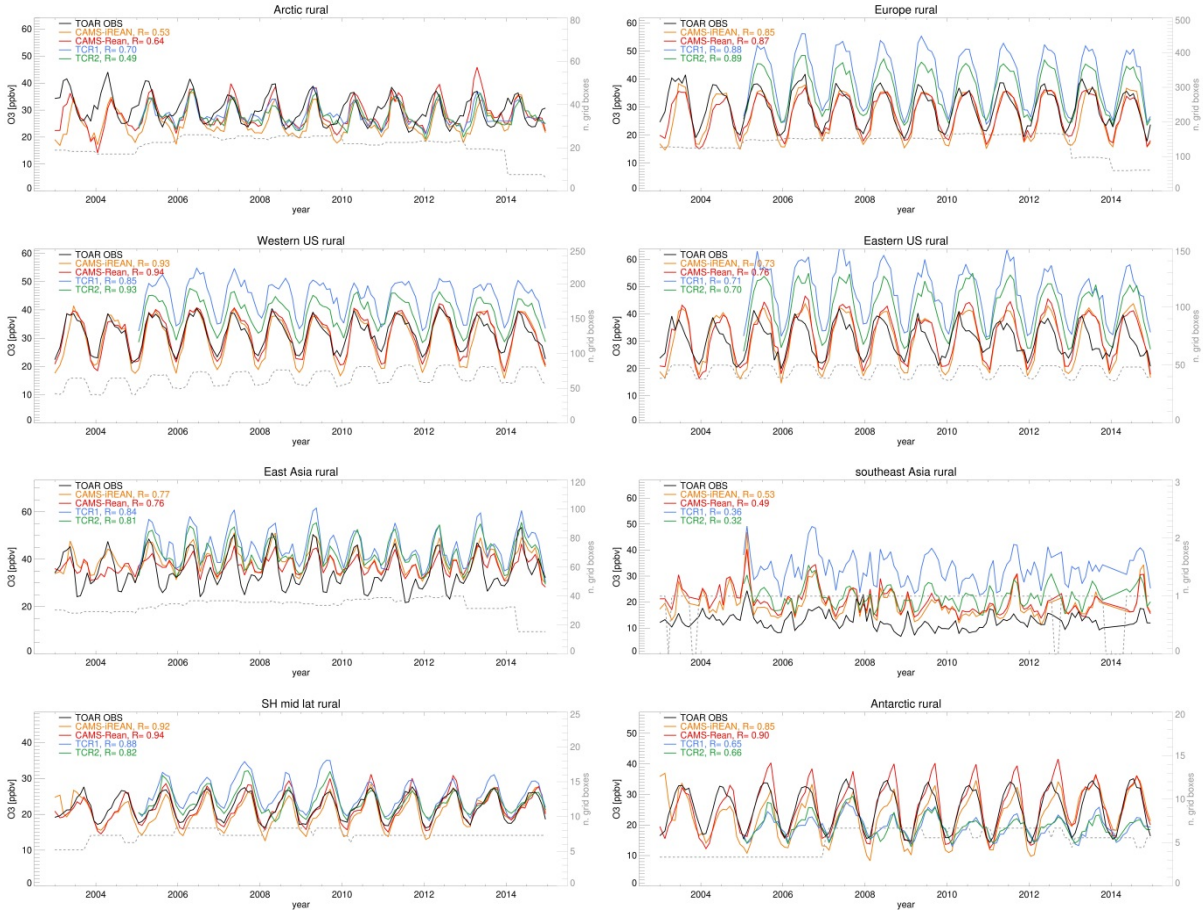


Figure S3: Time series of regional, monthly mean surface ozone against TOAR observations. The dashed line indicates the number of TOAR 2°×2° grid boxes contributing to the statistics (see also right axis). Also the temporal correlation for the 2005-2014 time series is given in the figure legends.

Figure S4: Anomalies in monthly mean O_3 partial columns (surface to 300 hPa) in four reanalyses, averaged for six regions: Arctic (>60°N), Eastern US (90°W – 70°W; 30°N - 43°N) Europe (10°W-30°E; 35°N-60°N), East Asia (108°E-160°E, 20°N-50°N), Tropics (30°S-30°N) and Antarctic (>60°S). Standard deviations for monthly mean anomalies are given, computed for the 2005-2016 time period.