



*Supplement of*

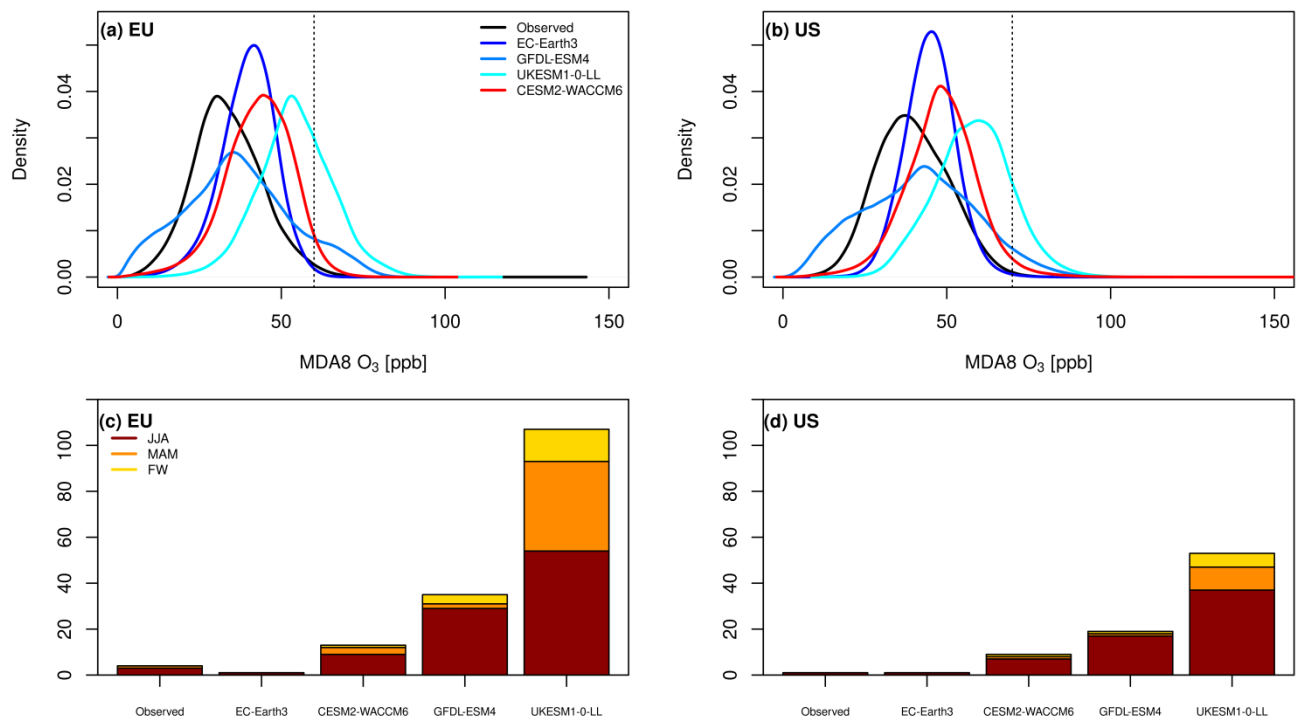
**Technical note: An assessment of the performance of statistical bias correction techniques for global chemistry–climate model surface ozone fields**

**Christoph Staehle et al.**

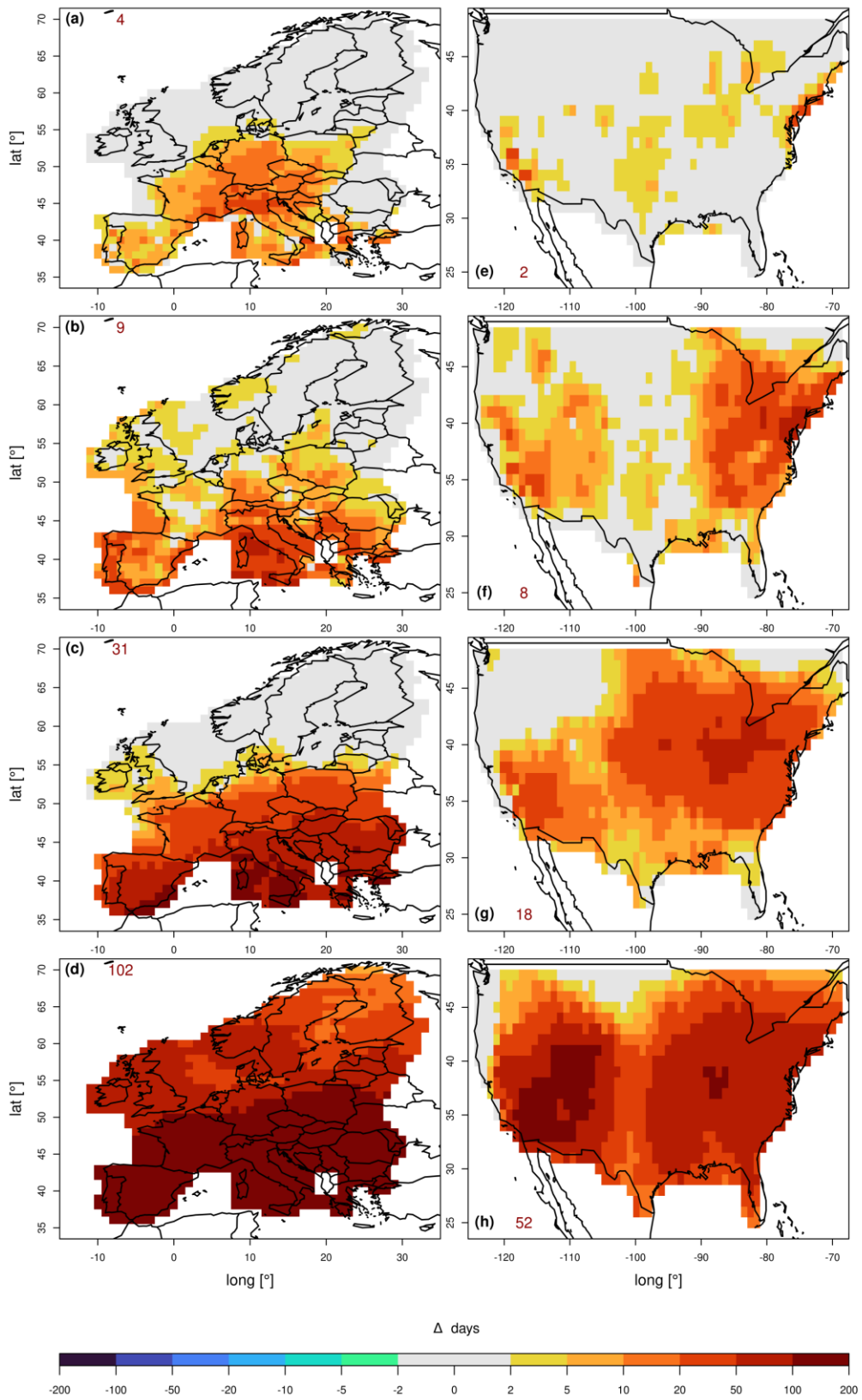
*Correspondence to:* Christoph Staehle ([christoph.staehle@boku.ac.at](mailto:christoph.staehle@boku.ac.at))

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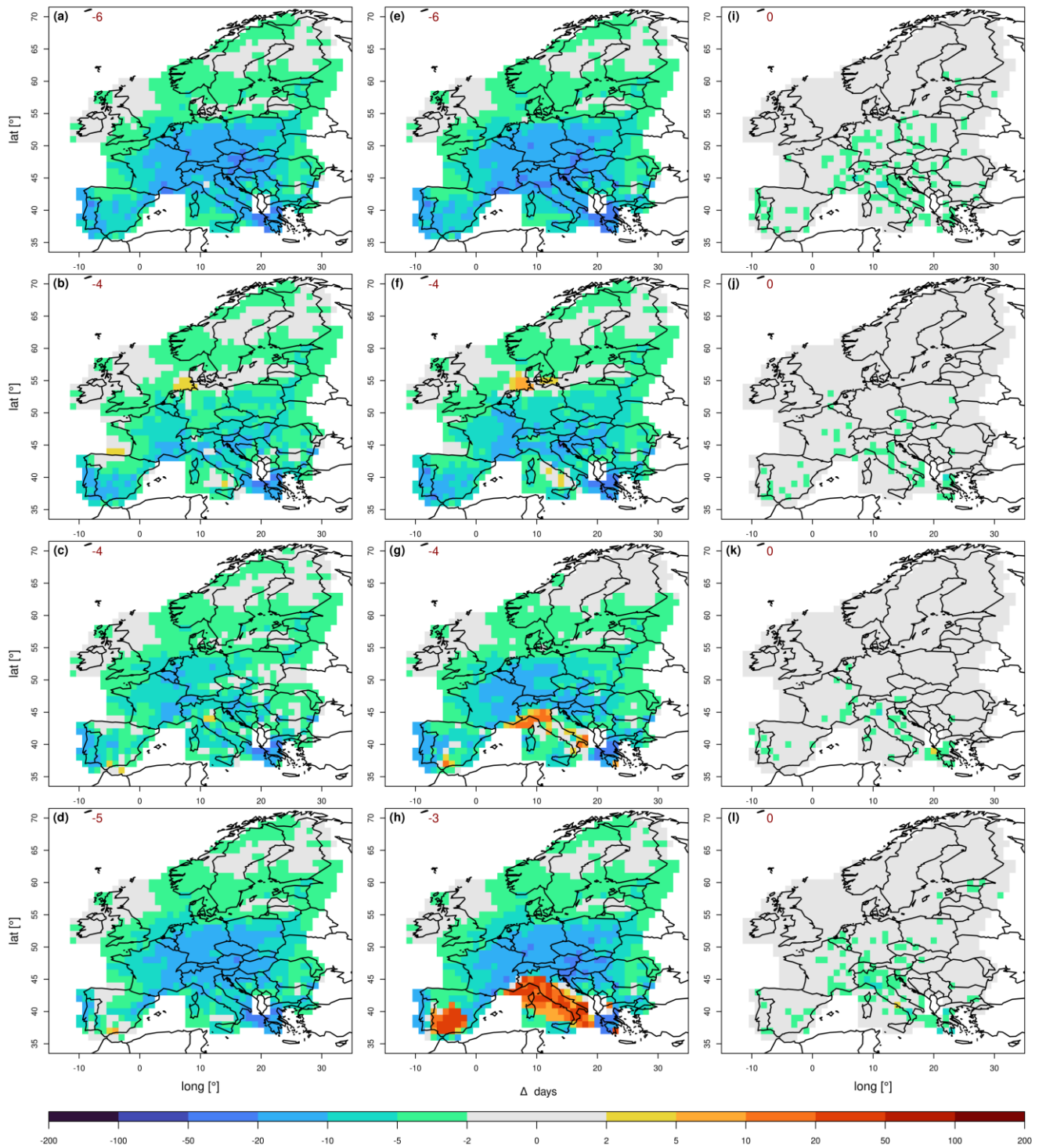
## Supplement



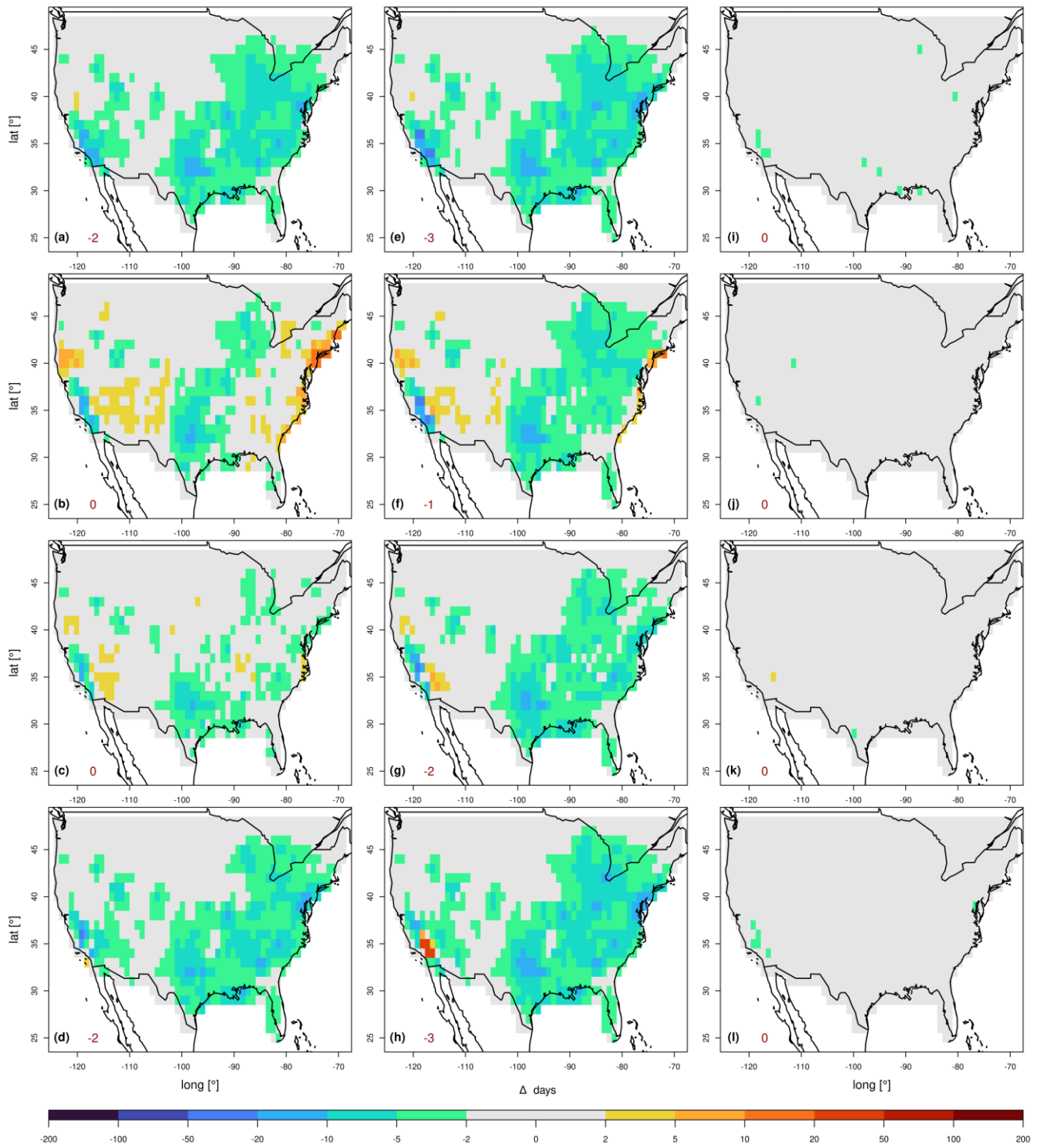
**Fig. S1:** As Fig. 1 but for 2010-2014.



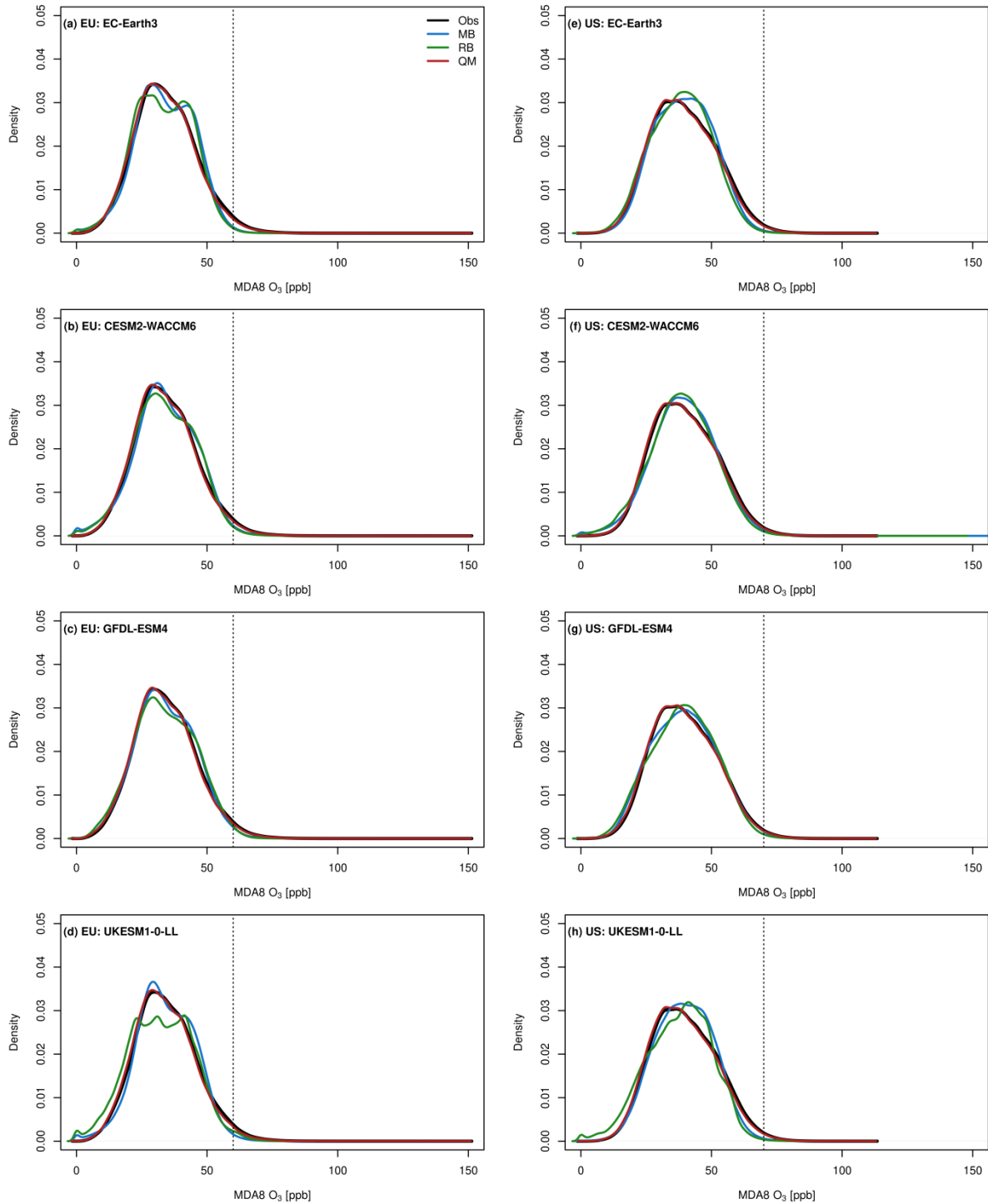
**Fig. S2:** As Fig. 2 but for 2010-2014.



**Fig. S3:** Average residual bias in the number of MDA8 O<sub>3</sub> exceedance days post bias correction as obtained by different CCMs for the EU domain. All panels for the base period (2005-2009). Rows give different CCM results, EC-Earth3 (a,e,i), CESM2-WACCM6 (b,f,j), GFDL-ESM4 (c,g,k) and UKESM1-0-LL (d,h,l), while columns give different correction methods MB (left), RB (middle) and QM (right). Red numbers in the upper/lower left corner indicate the grid cell residual bias. Grey shading indicates differences within  $\pm 2$  exceedance days.

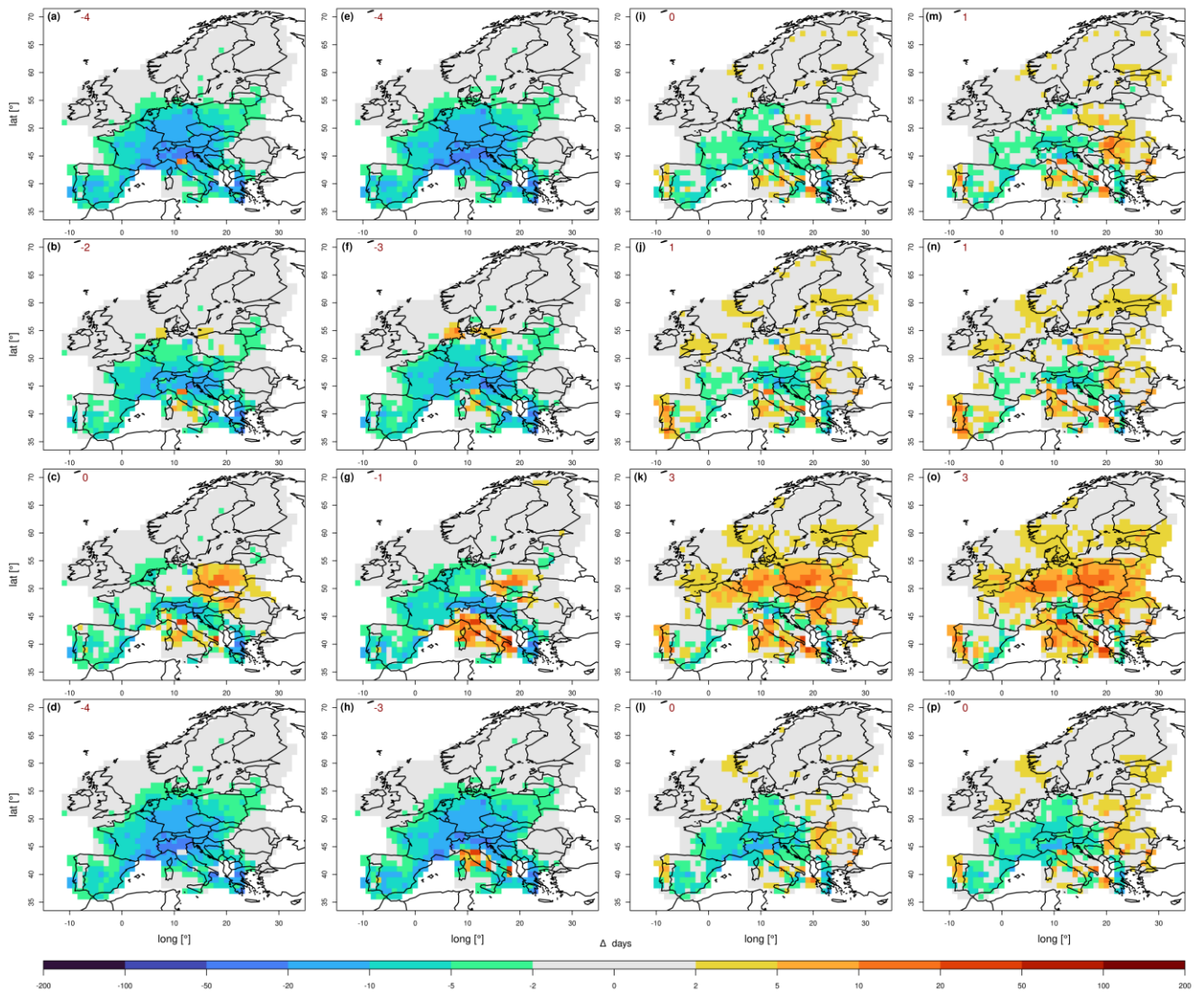


**Fig. S4:** As Fig. S3 but for the US domain.

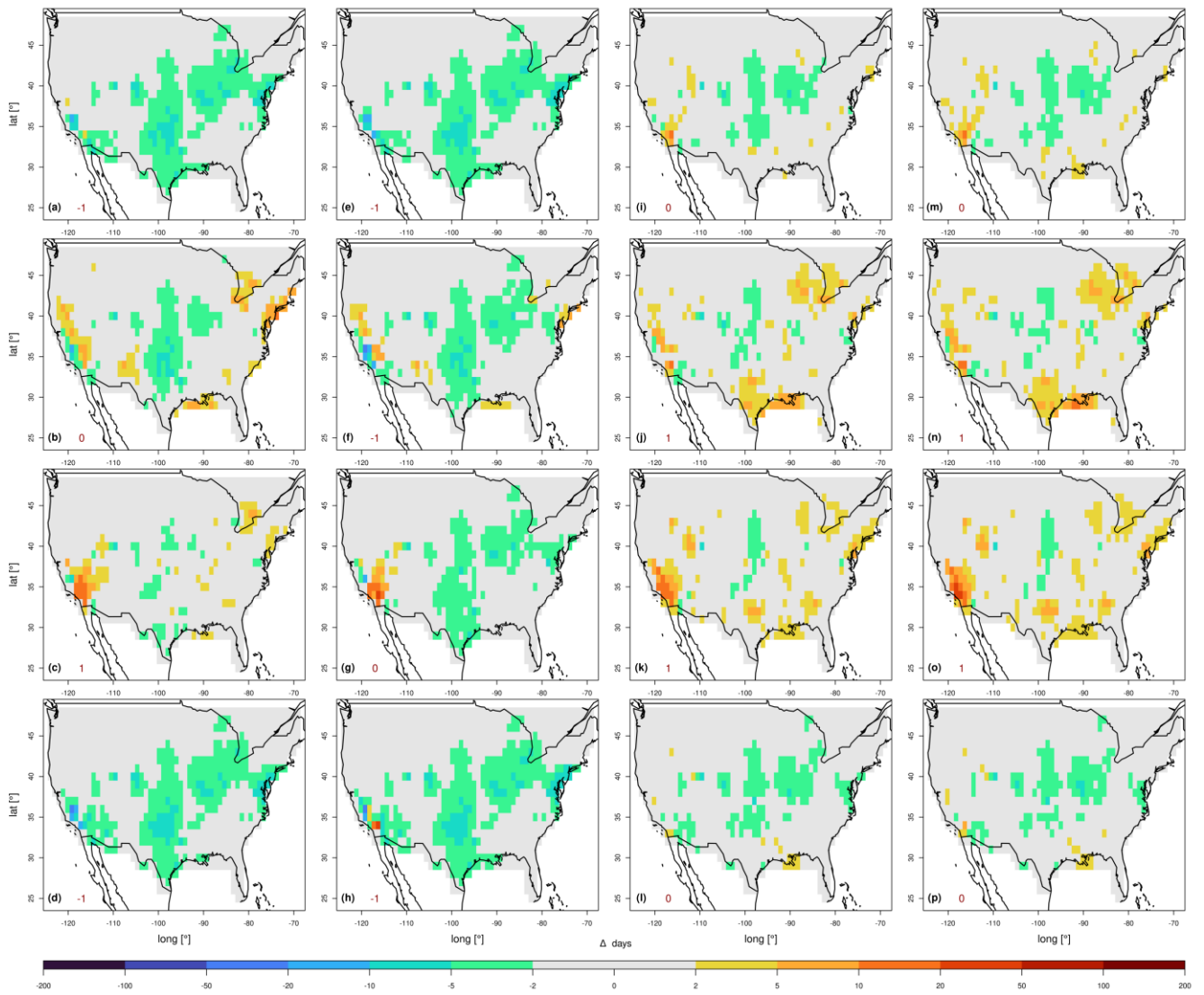


**Fig. S5:** Probability density function (PDF) of observed (black) and bias corrected model (coloured) MDA8 O<sub>3</sub> during 2005 to 2009 in the EU (a-d) and US (e-h) domain (EC-Earth3 a & e, CESM2-WACCM6 b & f, GFDL-ESM4 c & g and UKESM1-0-LL d & h). Dashed vertical lines indicate the target value for the protection of human health.



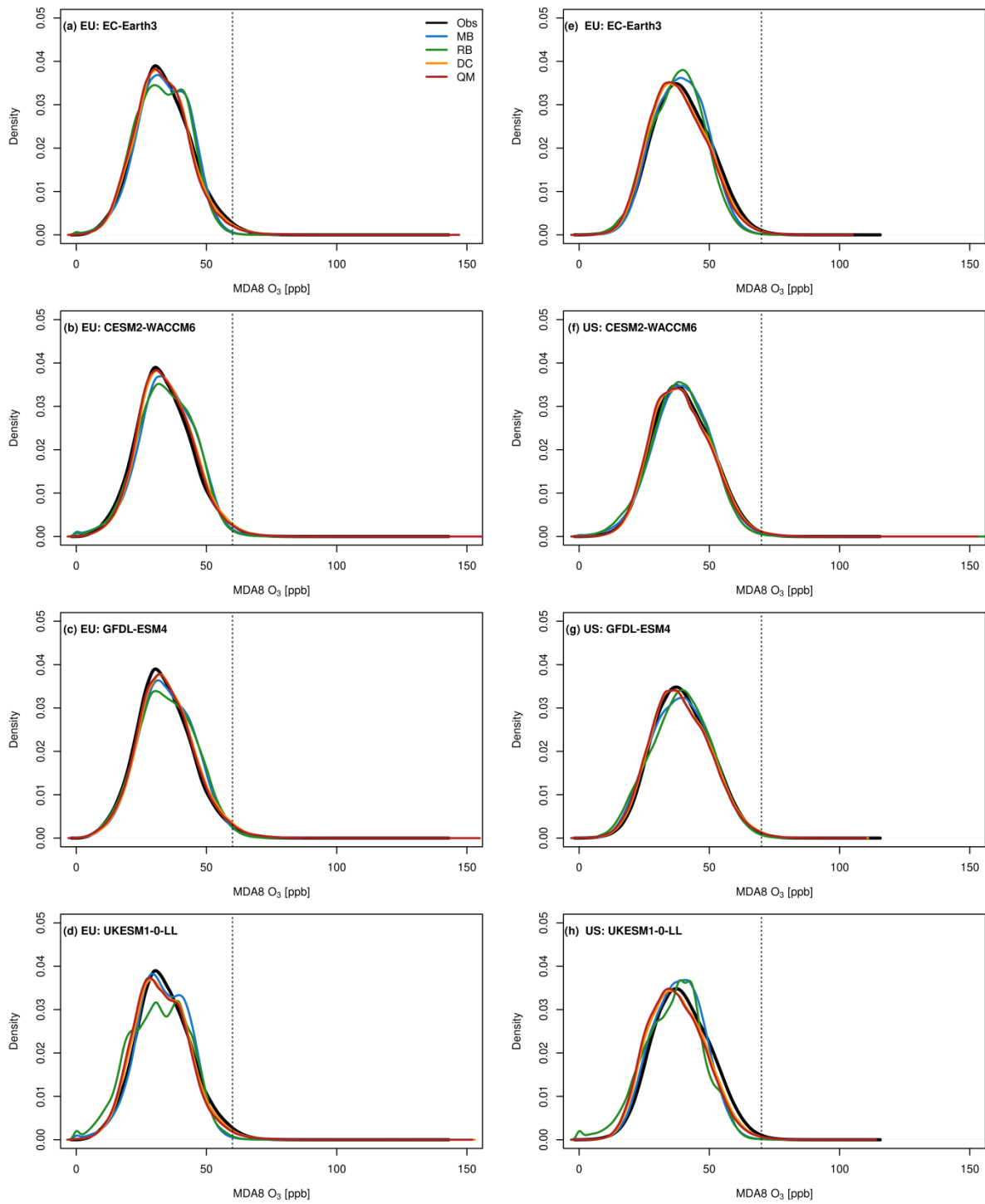


**Fig. S6:** As Fig. S3 but for 2010-2014. Note the columns show individual correction techniques: MB (1<sup>st</sup> column), RB (2<sup>nd</sup> column), DC (3<sup>rd</sup> column) and QM (4<sup>th</sup> column).

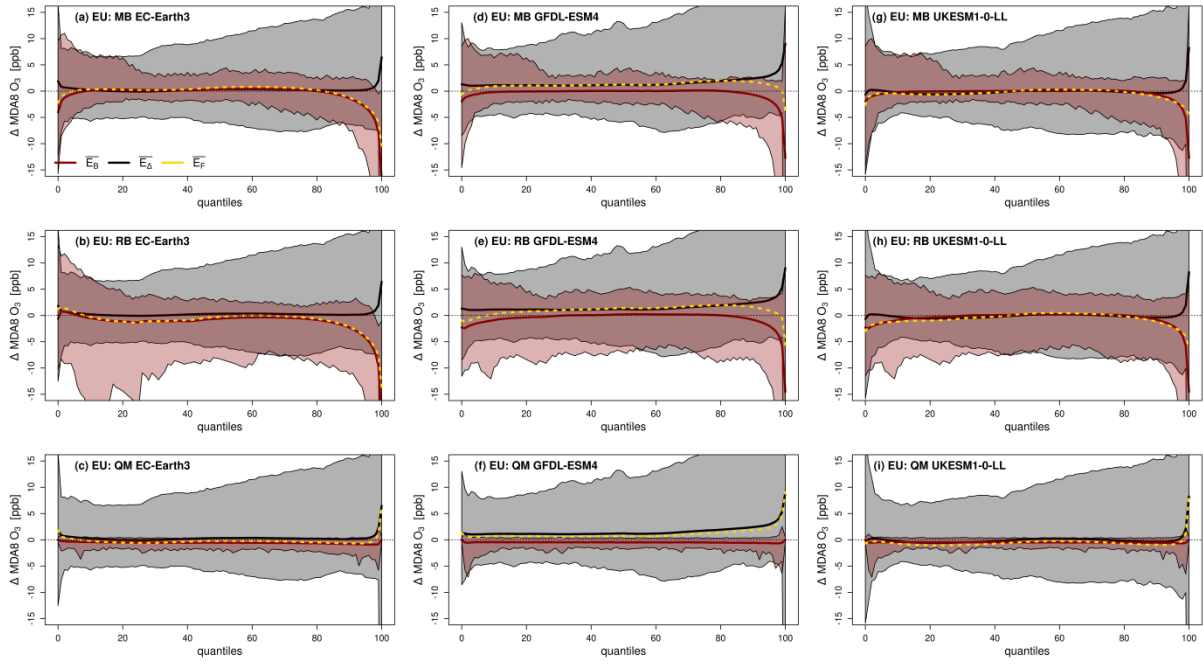


**Fig. S7:** As Fig. S6 but for the US domain.

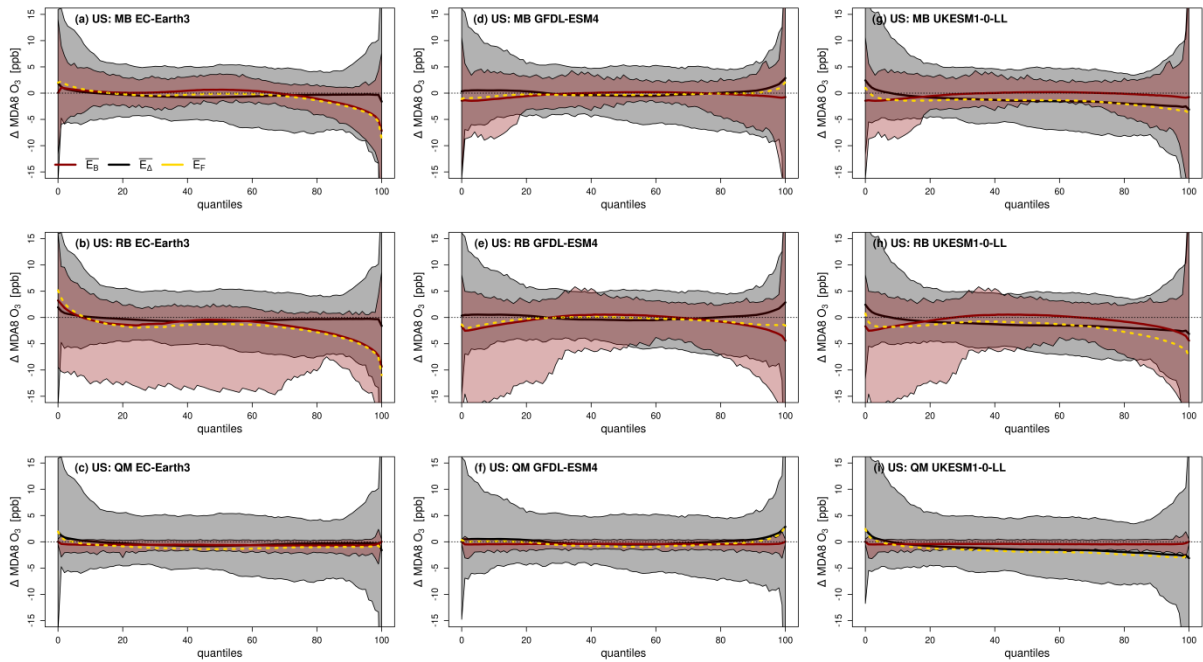




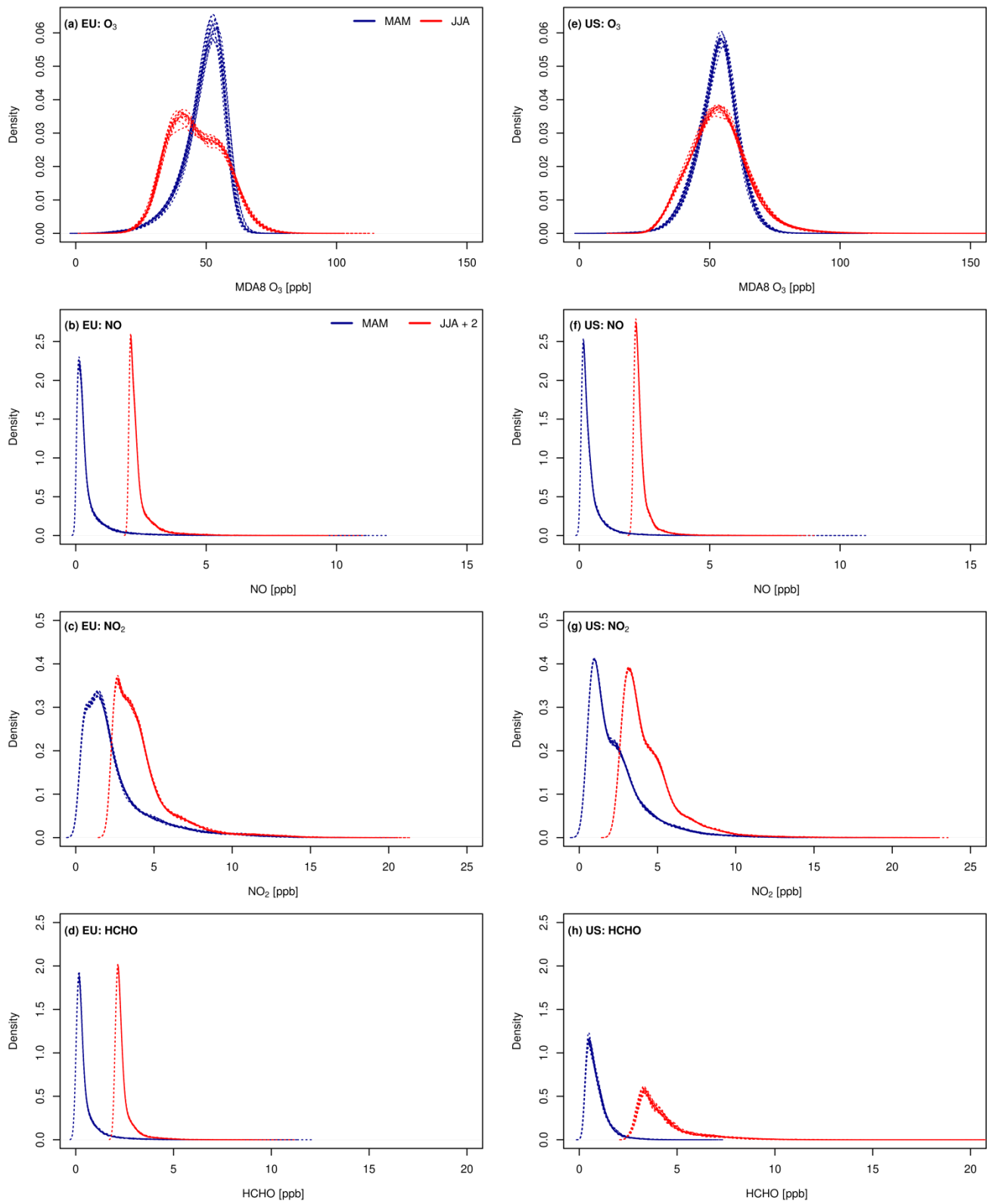
**Fig. S8:** As Fig. S5 but for 2010-2014.



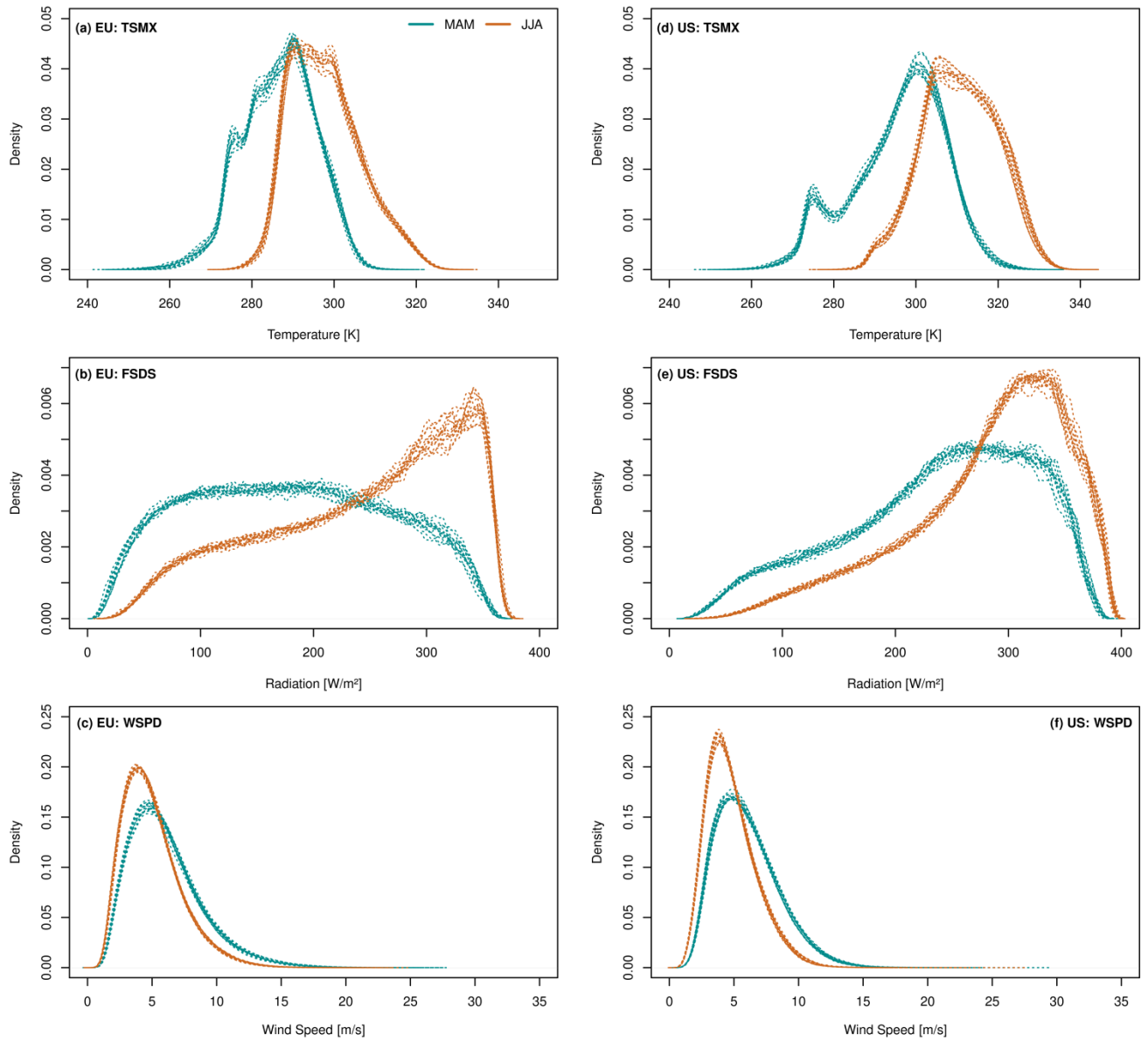
**Fig. S9:** As Fig. 5 but for the EC-Earth3 (left column), GFDL-ESM4 (middle column) and UKESM1-0-LL (right column) models during the evaluation period, for the MB (a & d), RB (b & e) and DC/QM (c & f) methods, in the EU domain.



**Fig. S10:** As Fig. S9 but for the US domain.



**Fig. S11:** As Fig. 6 but for 2010-2014.



**Fig. S12:** Same as Fig. 7 but for 2010-2014.