Supplementary Information to: Atmospheric impacts of chlorinated very short-lived substances over the recent past: Part 1: the role of transport

Ewa M. Bednarz, Ryan Hossaini, Martyn P. Chipperfield, N. Luke Abraham, and Peter Braesicke



Figure S1. Surface volume missing ratios [ppt] of (a) CH_2CI_2 , (b) $CHCI_3$, (c) C_2CI_4 , and (d) $C_2H_4CI_2$ as a function of time and latitude simulated in the ensemble mean VSLS.



Figure S2. Comparison of the time evolution of the monthly mean 30°S-30°N SSTs datasets imposed in the simulations. Black shows the CMIP6-recommended dataset (Durack and Taylor, 2016), red shows the dataset from Reynolds and Smith (1994).



Figure S3. Shading: 2010-2018 difference [ppt] in (a) HCl, (b) CIONO₂, (c) COCl₂, and (d) CIO response between Δ SD-5 and Δ FR. Contours show the corresponding Δ SD-5 responses.



Fig. S4. As in Fig. S2 but for the difference between the $\Delta \text{SD-I}$ and ΔFR responses.



Figure S5. As in Fig. 10 of the main paper but for linear trends in deseasonalised AoA [day/10yrs].



Figure S6. As in Fig. 11 of the main paper but for linear trends in $COCI_2$ mixing ratios [ppt/10yrs].



Figure S7. As in Fig. 9 of the main paper but for COCl₂ trends.