Supplement to "Large ensemble assessment of the Arctic stratospheric polar vortex"

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1 Table of concents

– Rank Histograms for 50 hPa and 100 hPa (Figs. SS1-SS10)

– Scatter plots for displacement and split SSWs (Fig. S11 and S12)

2 Figures

Figure S1. Rank histograms of aspect ratio at 50 hPa of all analyzed climate ensembles with their respective statistics. Blue bars show counts for the individual bins, black dashed line corresponds to the expected value for a flat histogram, grey dashed lines indicate the perfect model range.

Figure S2. As figure S1 but for centroid latitude.

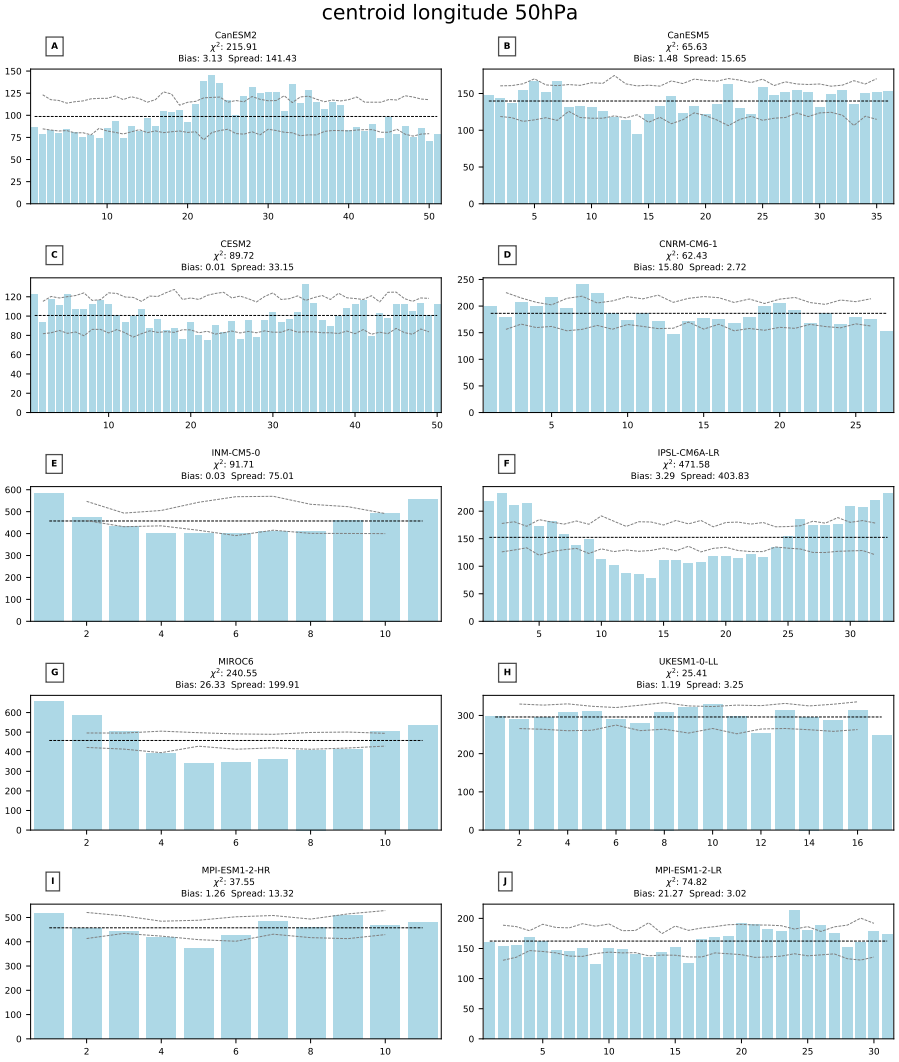

Figure S3. As figure S1 but for centroid longitude.

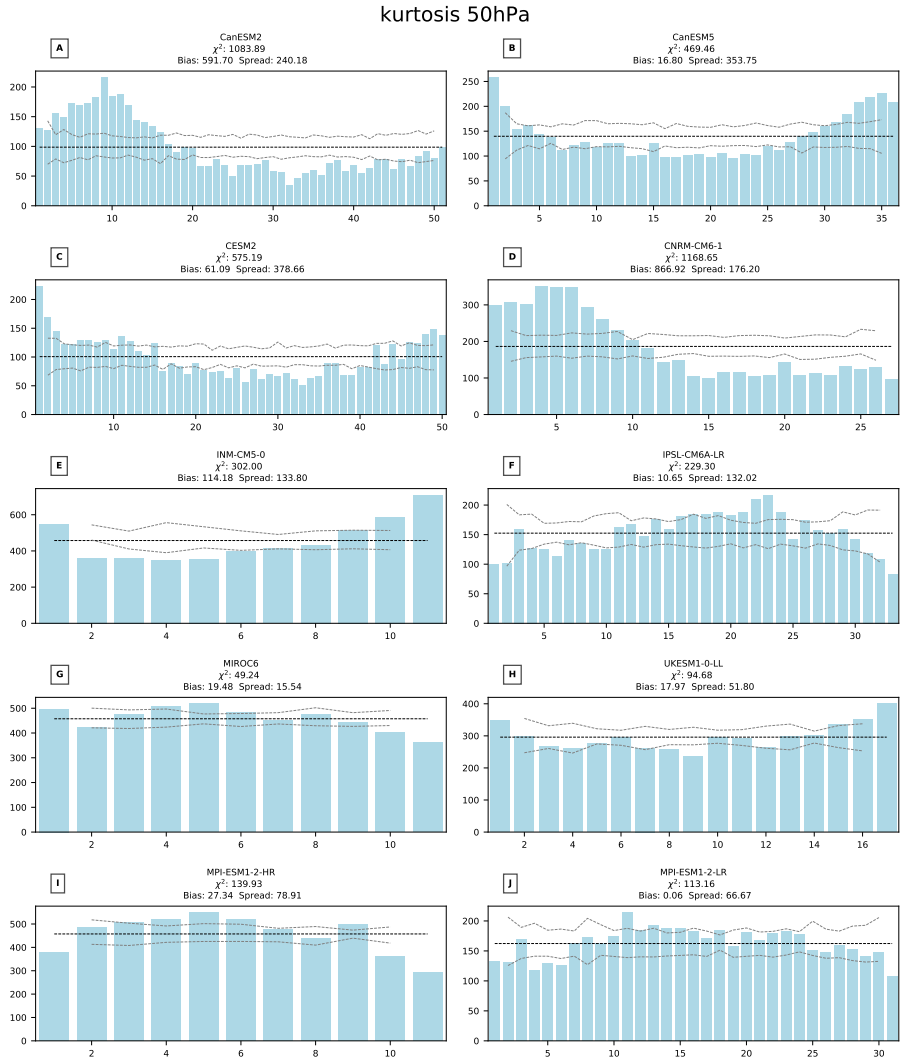

Figure S4. As figure S1 but for kurtosis.

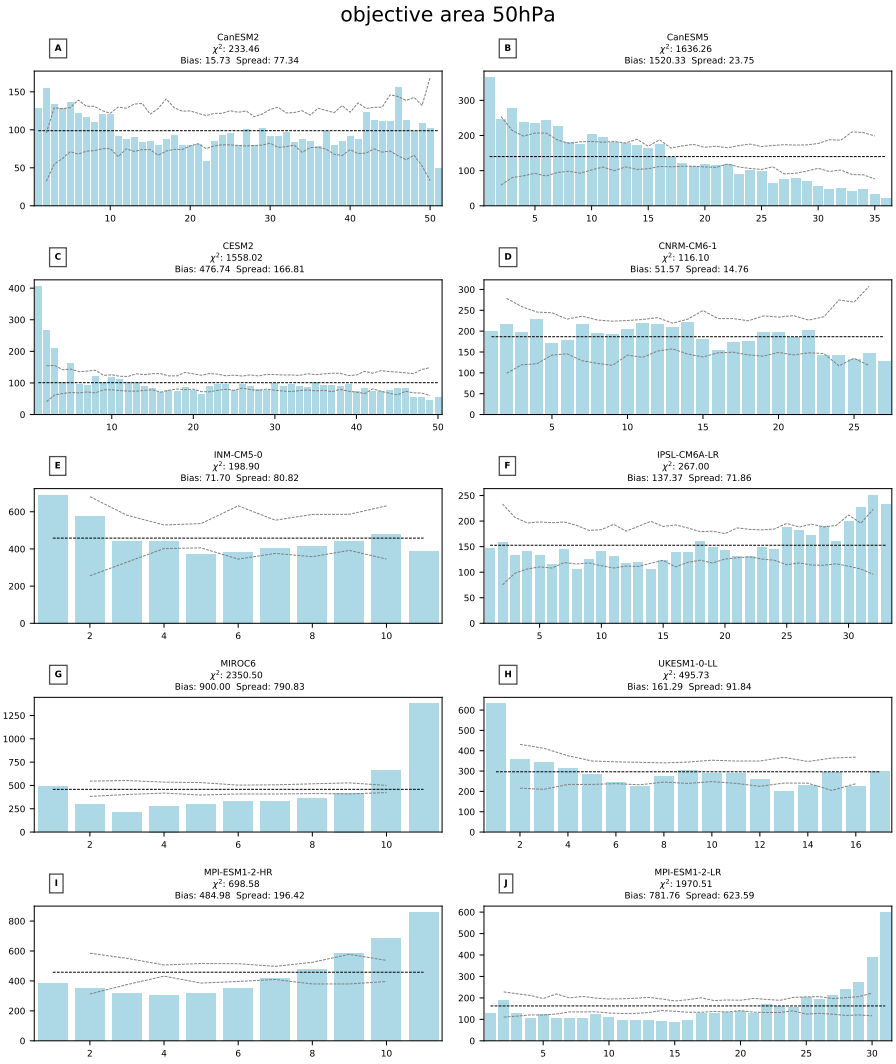

Figure S5. As figure S1 but for objective area.

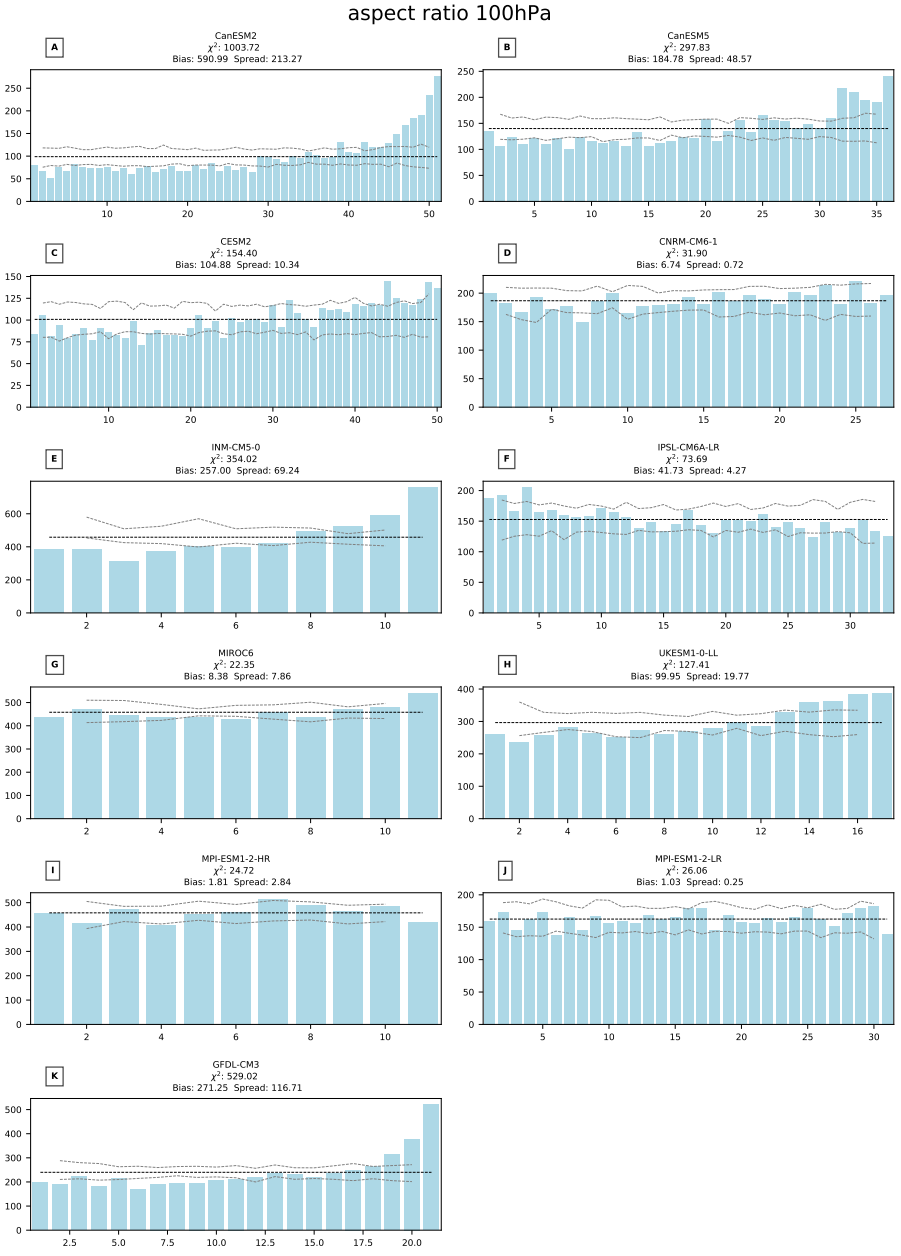

Figure S6. As figure S1 but for aspect ratio at 100 hPa.

Figure S7. As figure S1 but for centroid latitude at 100 hPa.

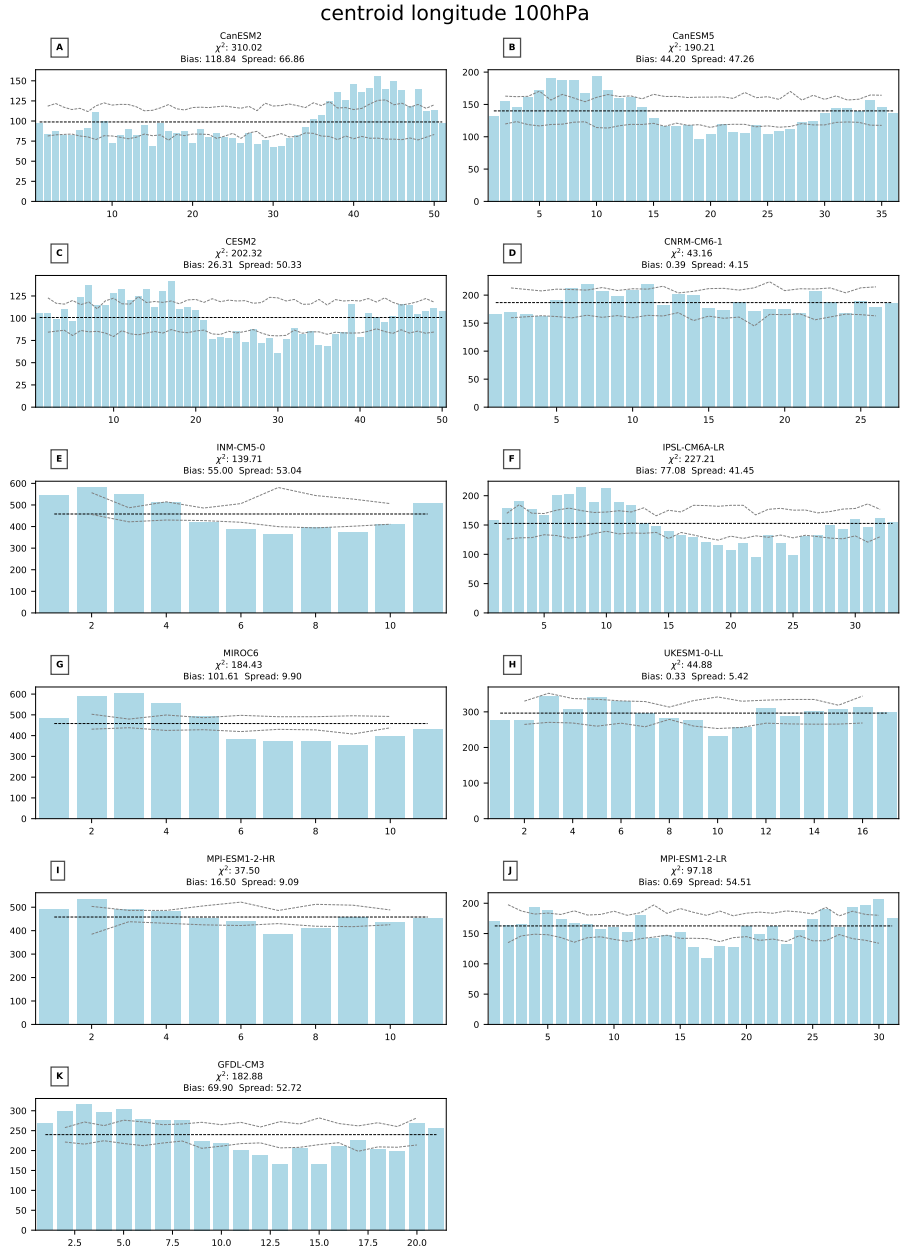

Figure S8. As figure S1 but for centroid longitude at 100 hPa.

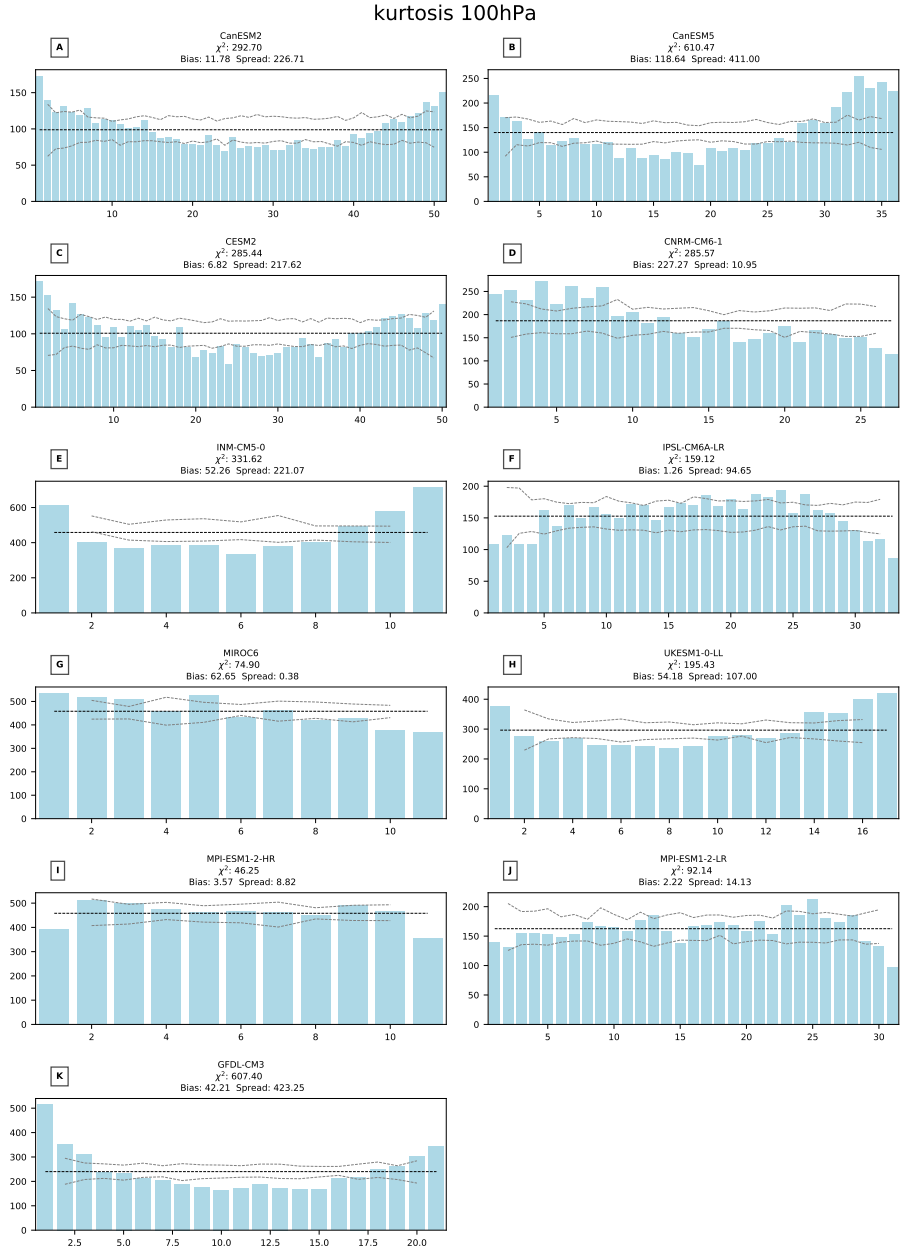

Figure S9. As figure S1 but for kurtosis at 100 hPa.

Figure S10. As figure S1 but for objective area at 100 hPa.

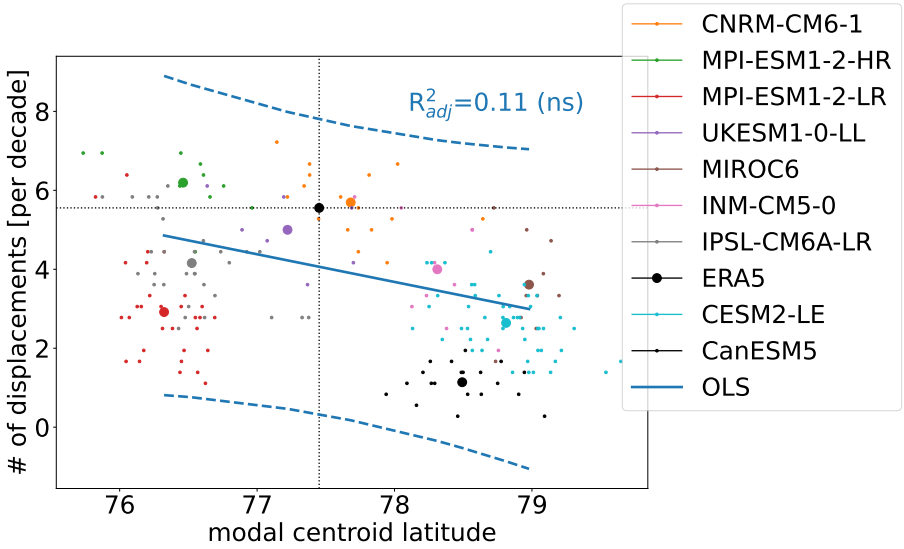

Figure S11. Modal DJFM centroid latitude and displacement SSWs per decade in large ensembles compared with ERA5. Solid line is ordinary least square regression for models only. Dashed lines represent results for ERA5.

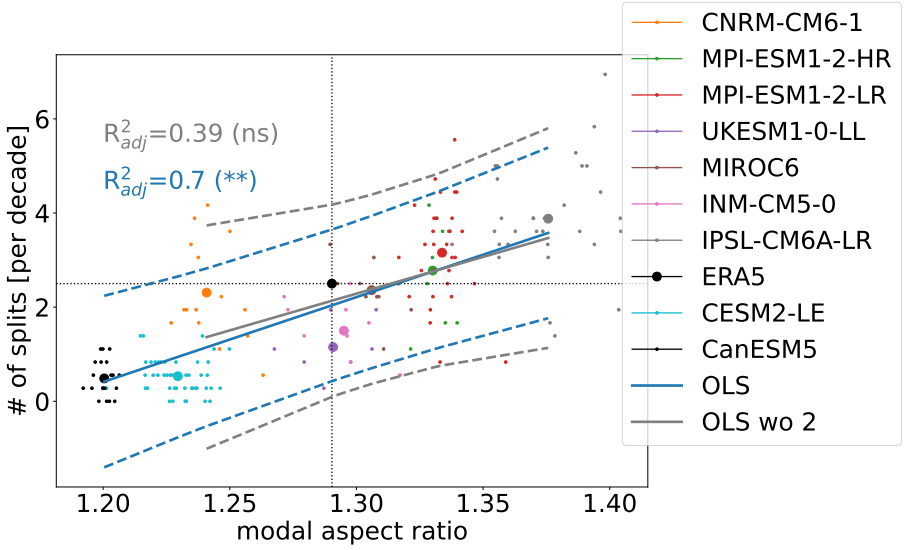

Figure S12. Modal DJFM aspect ratio and split SSWs per decade in large ensembles compared with ERA5. Lines are best-fit regression lines for models only. Solid blue and gray lines are ordinary least square regression for all models and high-top models only (i.e. except CESM2 and CanESM2), respectively. Dashed lines represent results for ERA5.