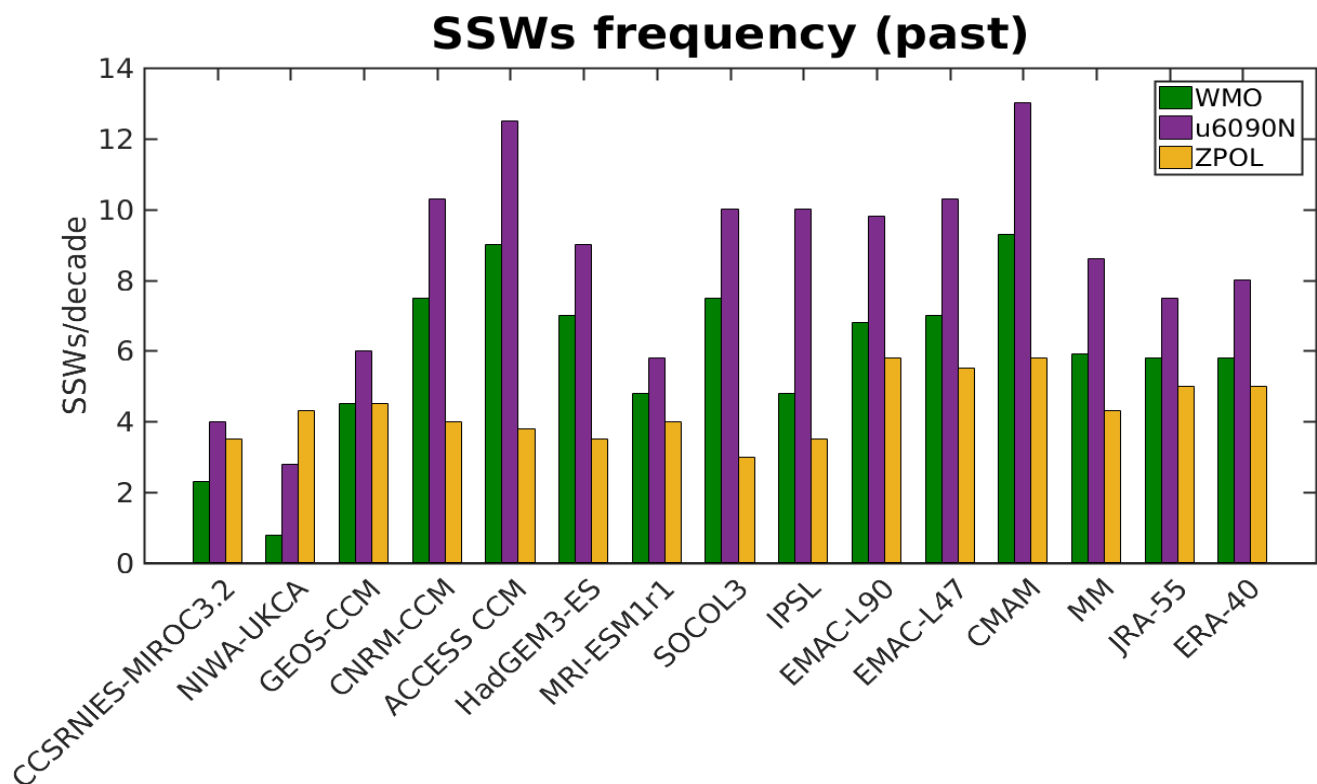
Supplementary material

5 **Figure S1. Mean frequency of major stratospheric warmings per decade identified with the WMO (green), u6090N (purple) and ZPOL (yellow) criteria in all models, the multimodel mean (MM), JRA-55 and ERA-40 in the past period.**

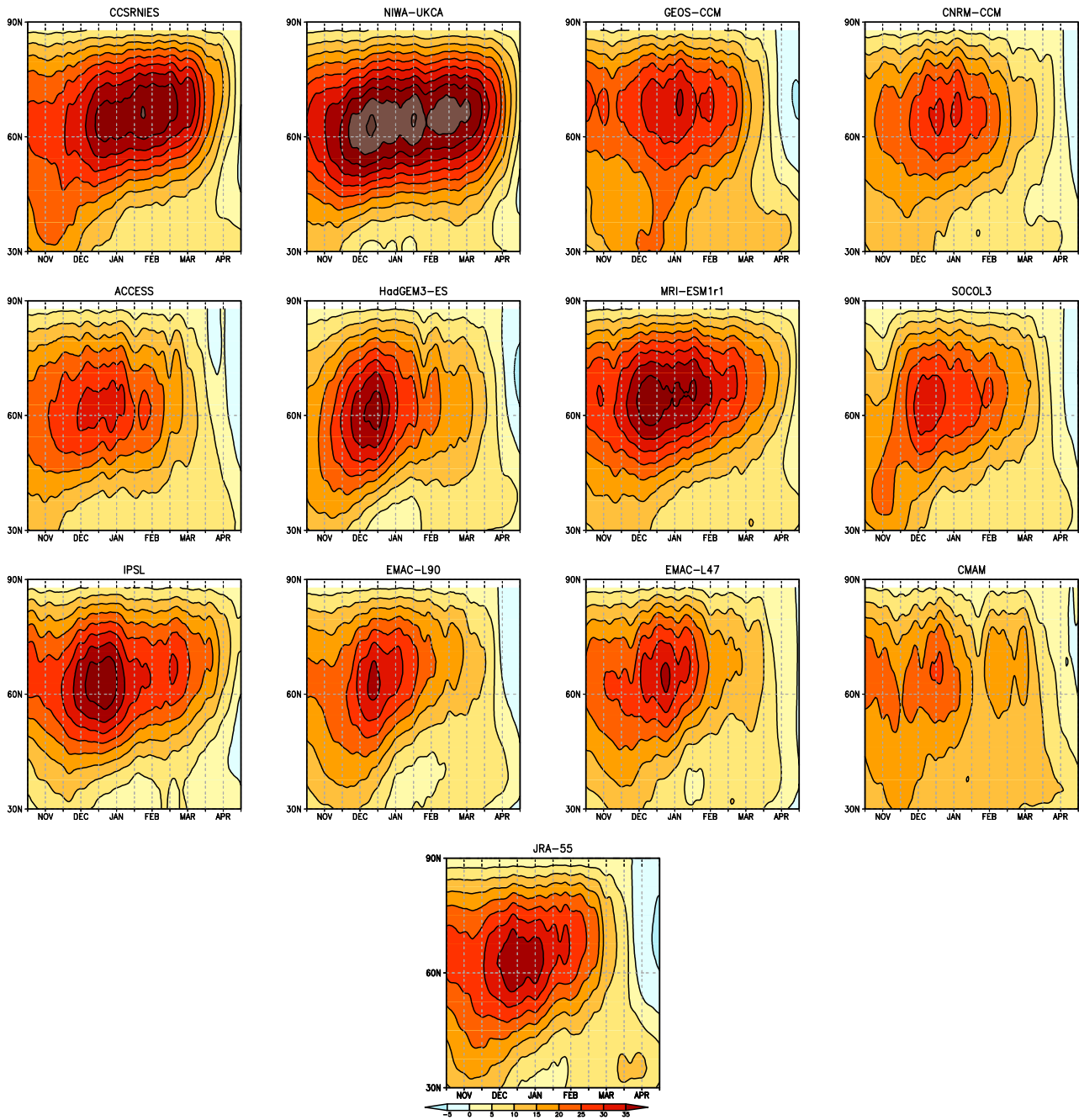



Figure S2. Climatology of 5-day running mean of zonal mean zonal wind at 10 hPa in the past period (1960/61-1999/2000). Shading interval: 5 m s⁻¹.

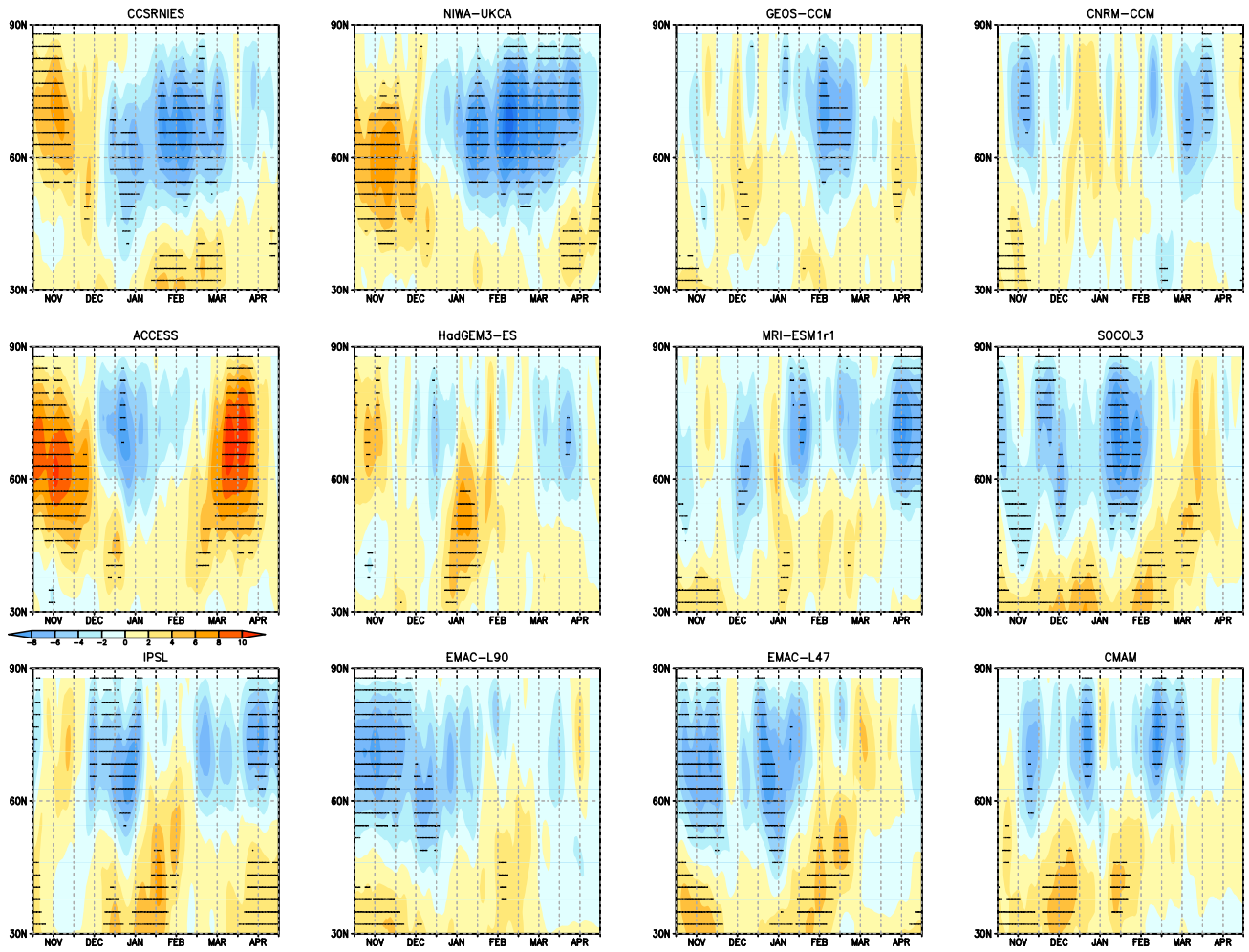



Figure S3. Future-minus-past differences in the climatology of 5-day running mean of zonal mean zonal wind at 10hPa. Shading interval: 2 m s⁻¹. Dots indicate statistically significant differences at a 95% confidence level.