
# Supplemental Material

Supplementary Materials for "The Role of Extratropical Background Flow on Modulating the MJO Extratropical Response" by Zheng and Chang

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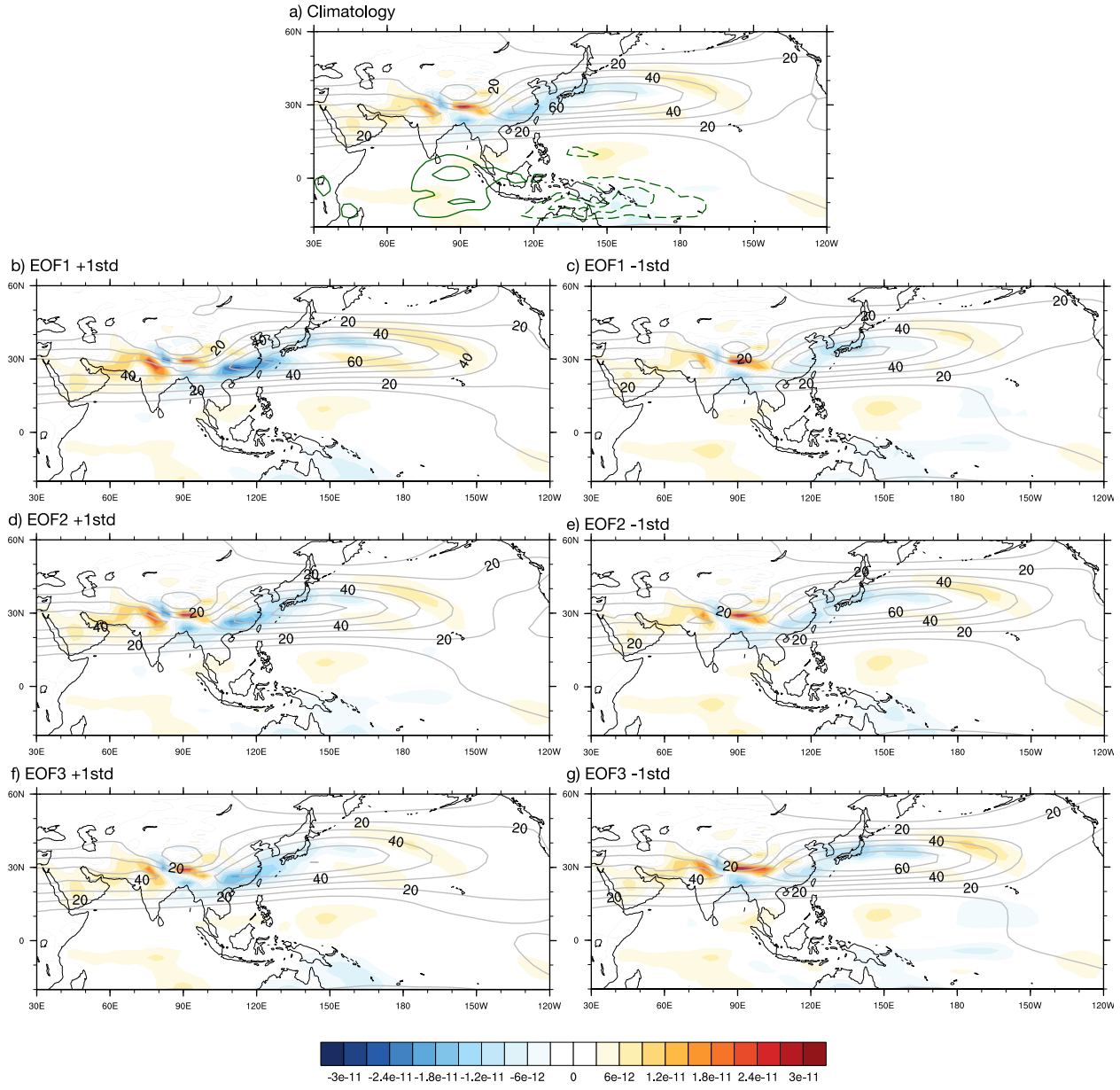


FIG. S1. Similar to Fig. 5 in the main text, but for the first term of equation (2).

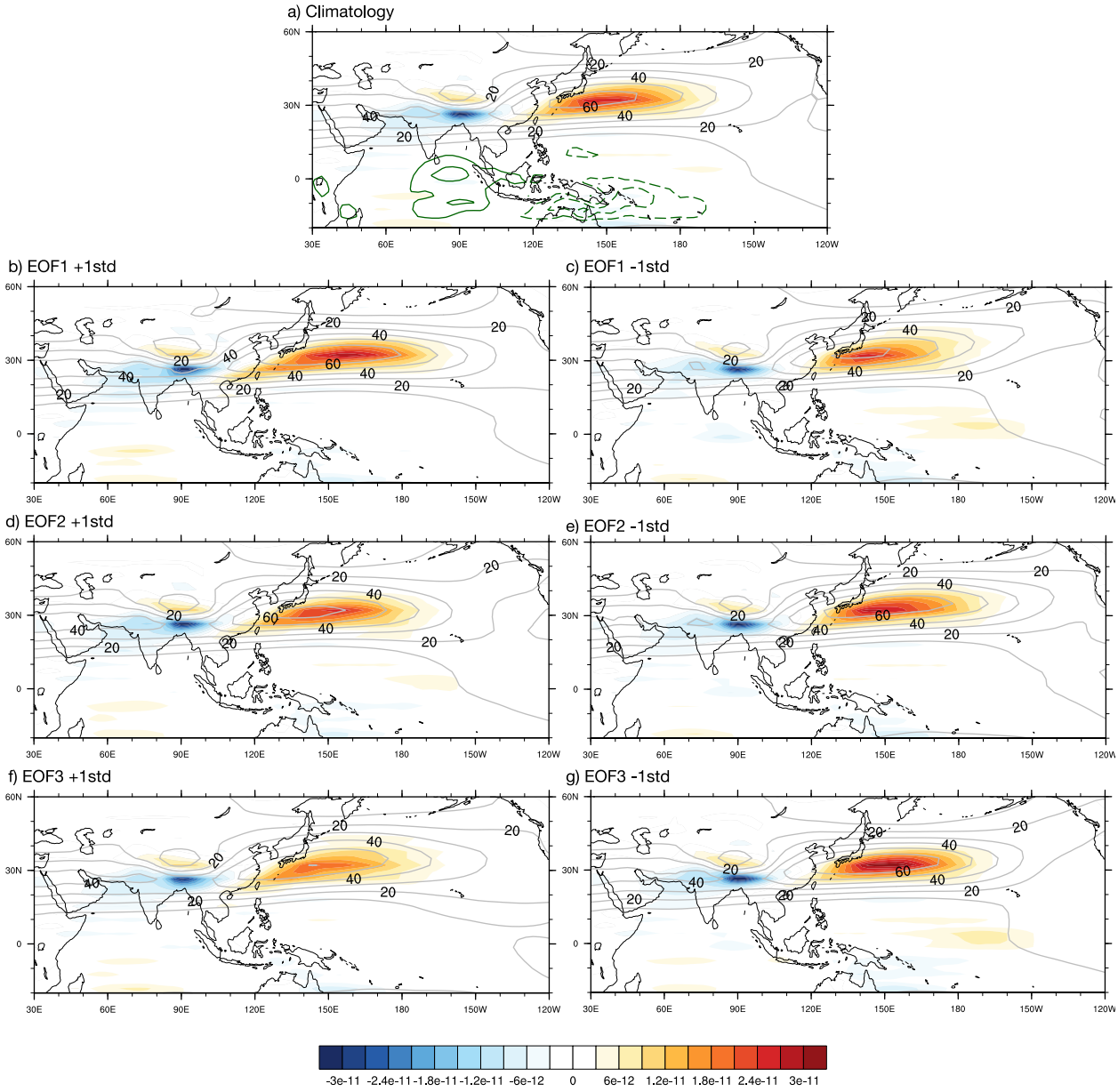


FIG. S2. Similar to Fig. 5 in the main text, but for the second term of equation (2).

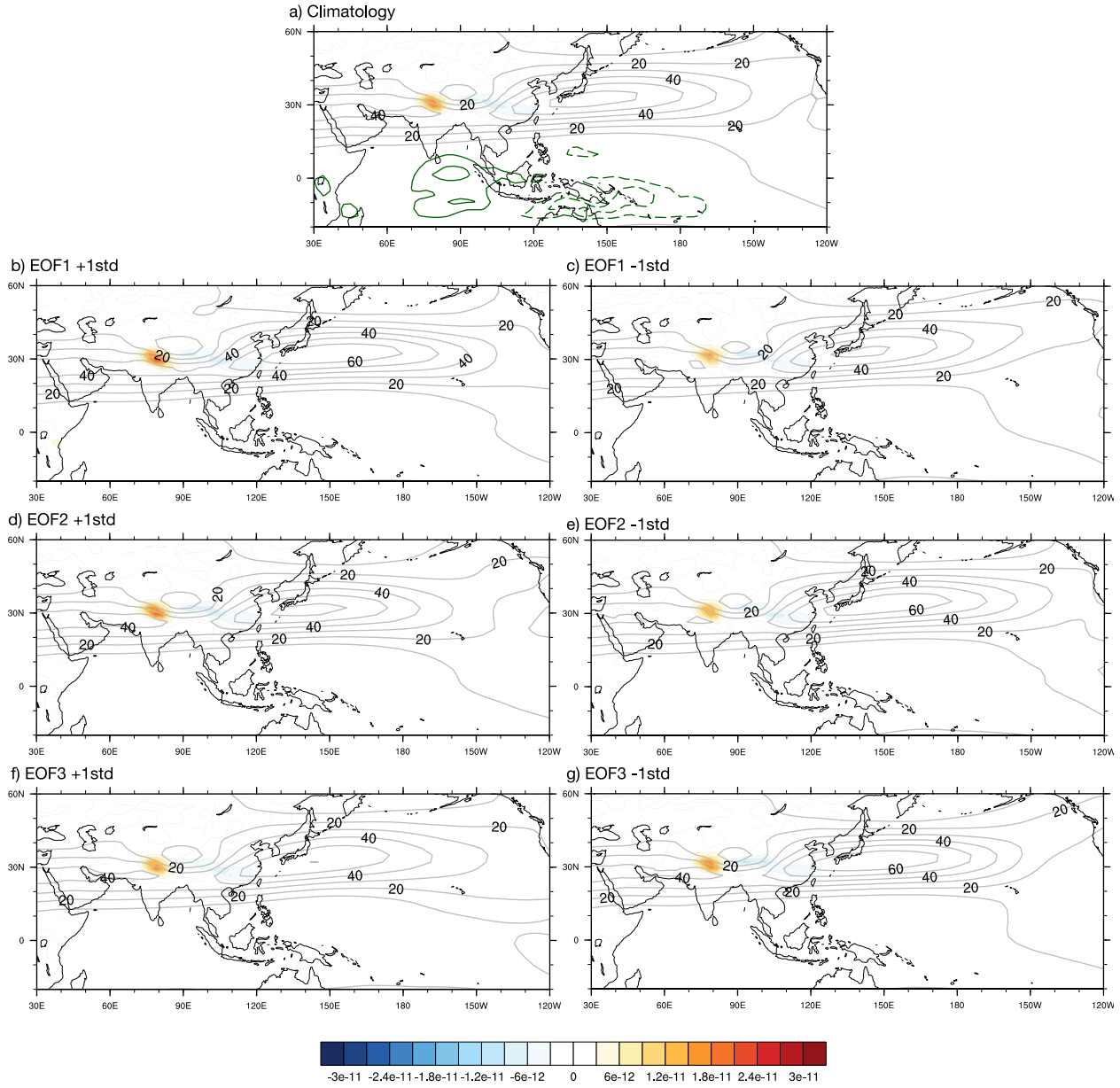


FIG. S3. Similar to Fig. 5 in the main text, but for the third term of equation (2).

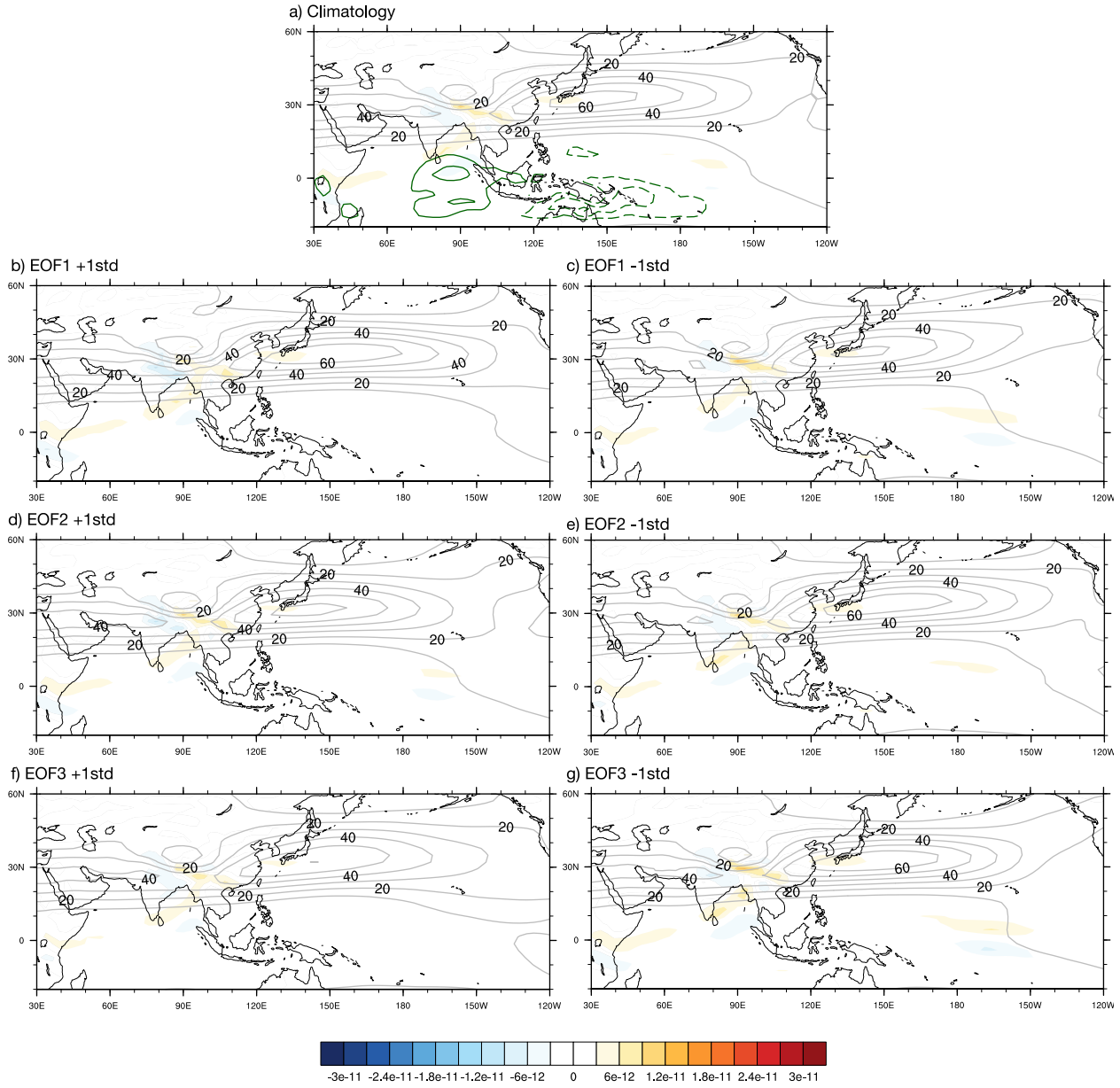


FIG. S4. Similar to Fig. 5 in the main text, but for the fourth term of equation (2).

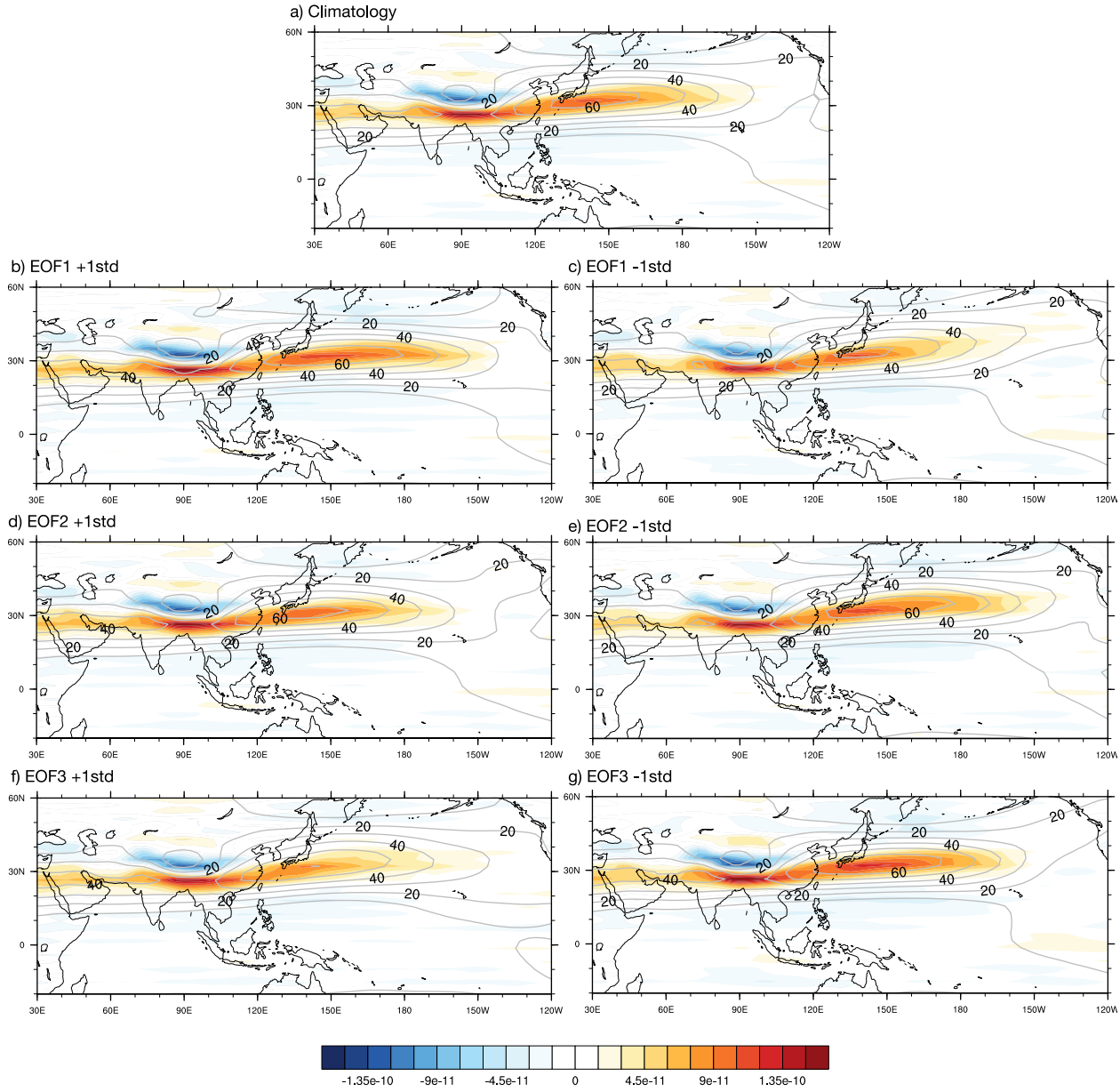


FIG. S5. Similar to Fig. 5 in the main text, but for meridional gradient of basic state absolute vorticity.

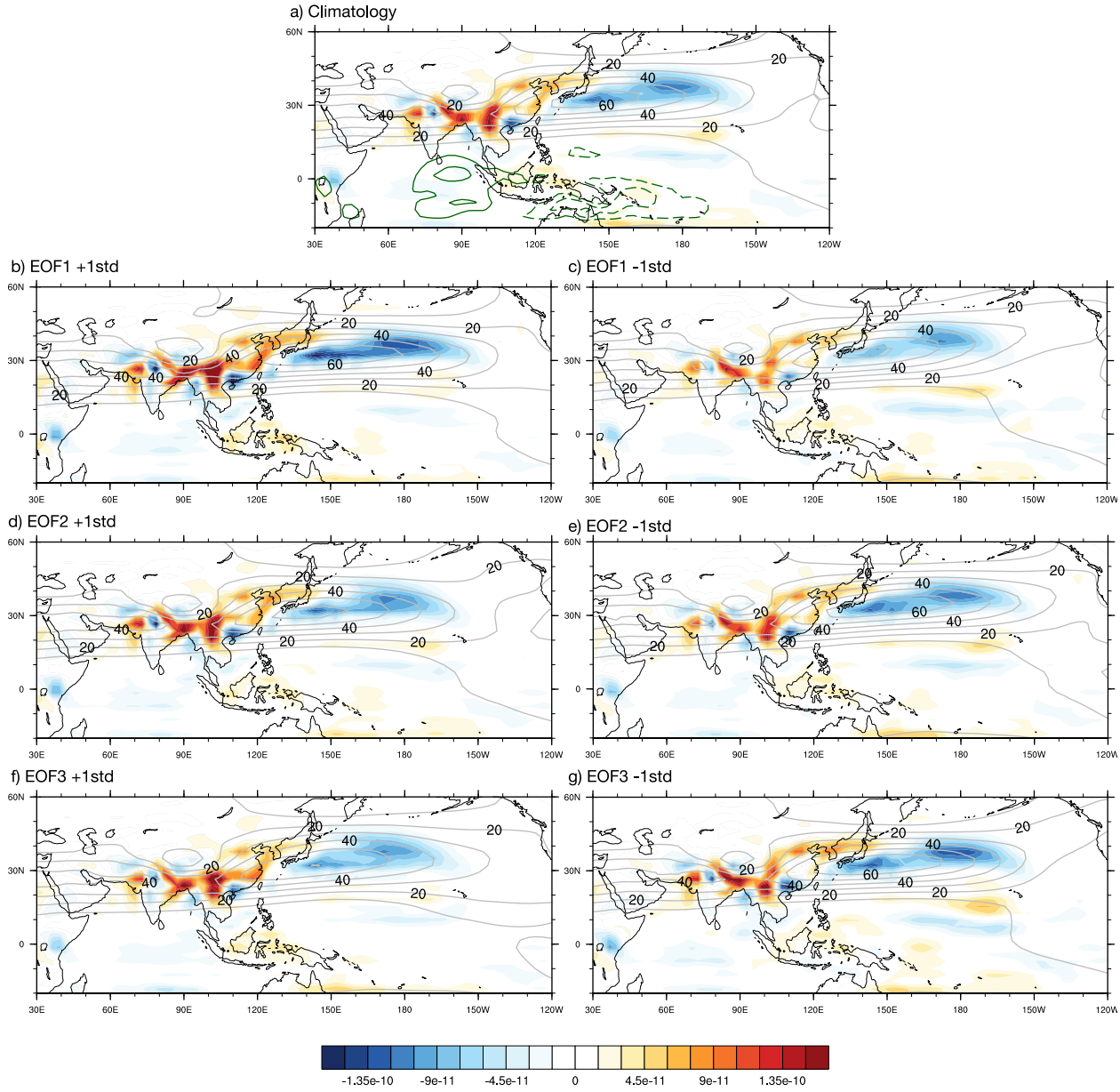


FIG. S6. Similar to Fig. 5 in the main text, but for the terms of advection of vorticity due to rotational wind in equation (1).

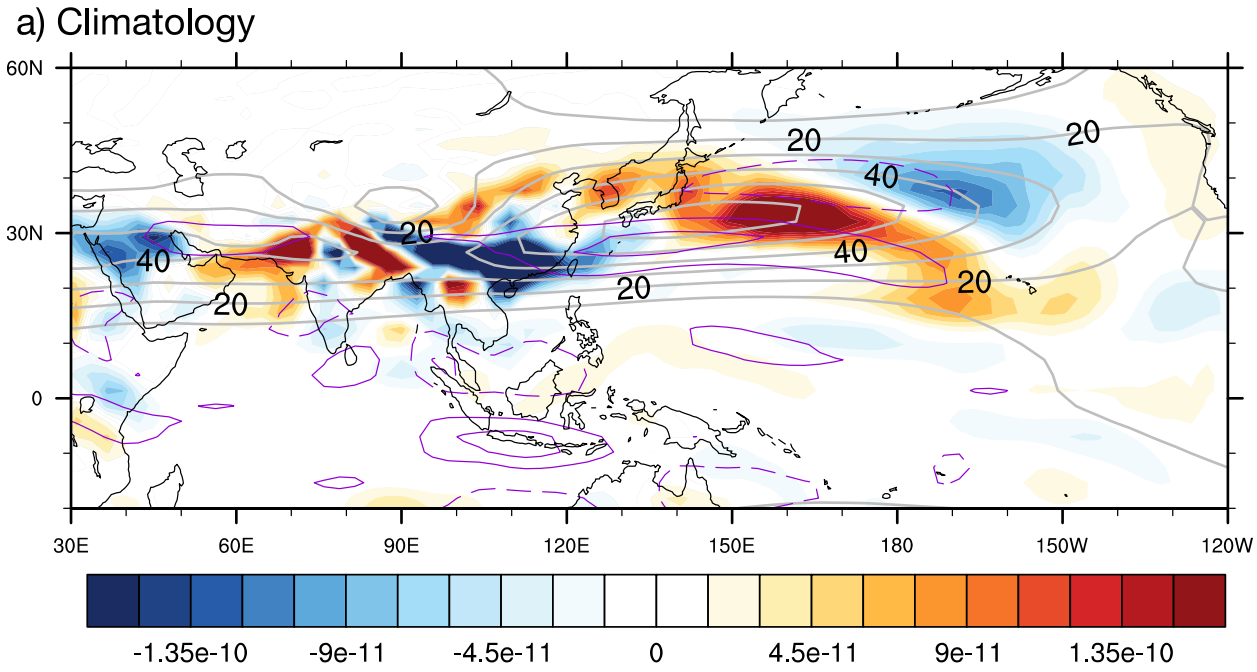


FIG. S7. Similar to Fig. 6a but shows the third term on the right-hand side of equation (1) at day 4. The purple contours show the vorticity anomaly at 300-hPa (solid for positive, dashed for negative, and zero contour omitted). The contour interval is $1 \times 10^{-6} s^{-1}$.

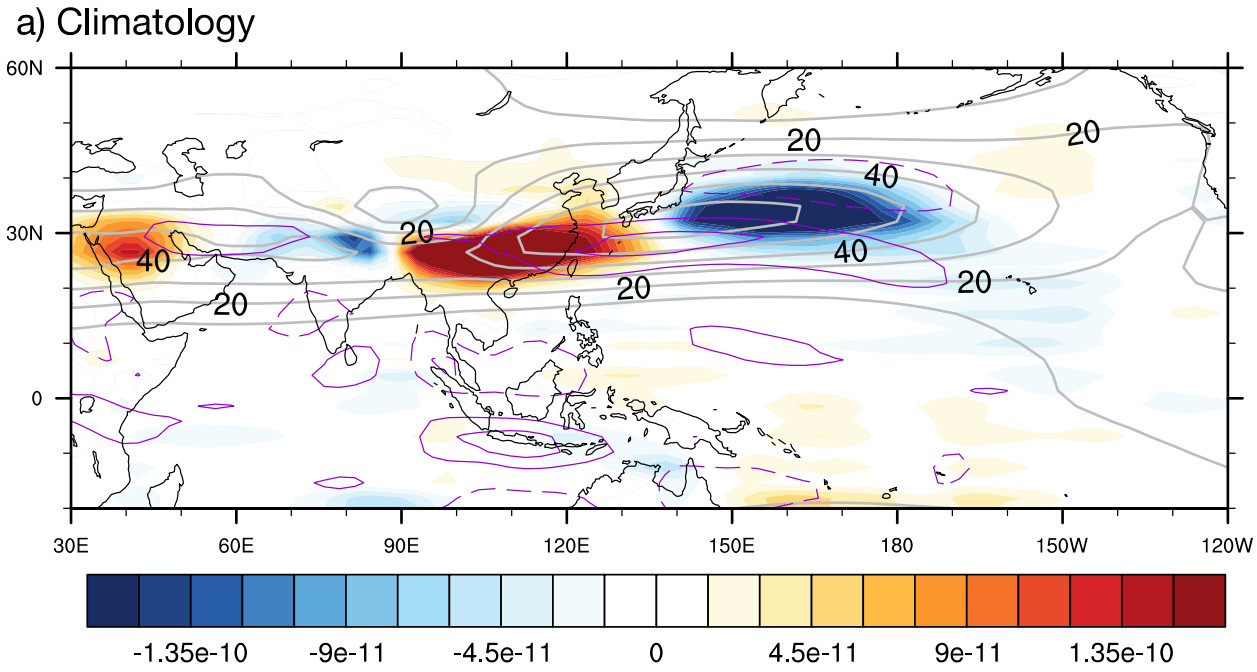


FIG. S8. Similar to Fig. S7 but shows the second term on the right-hand side of equation (1) at day 4.

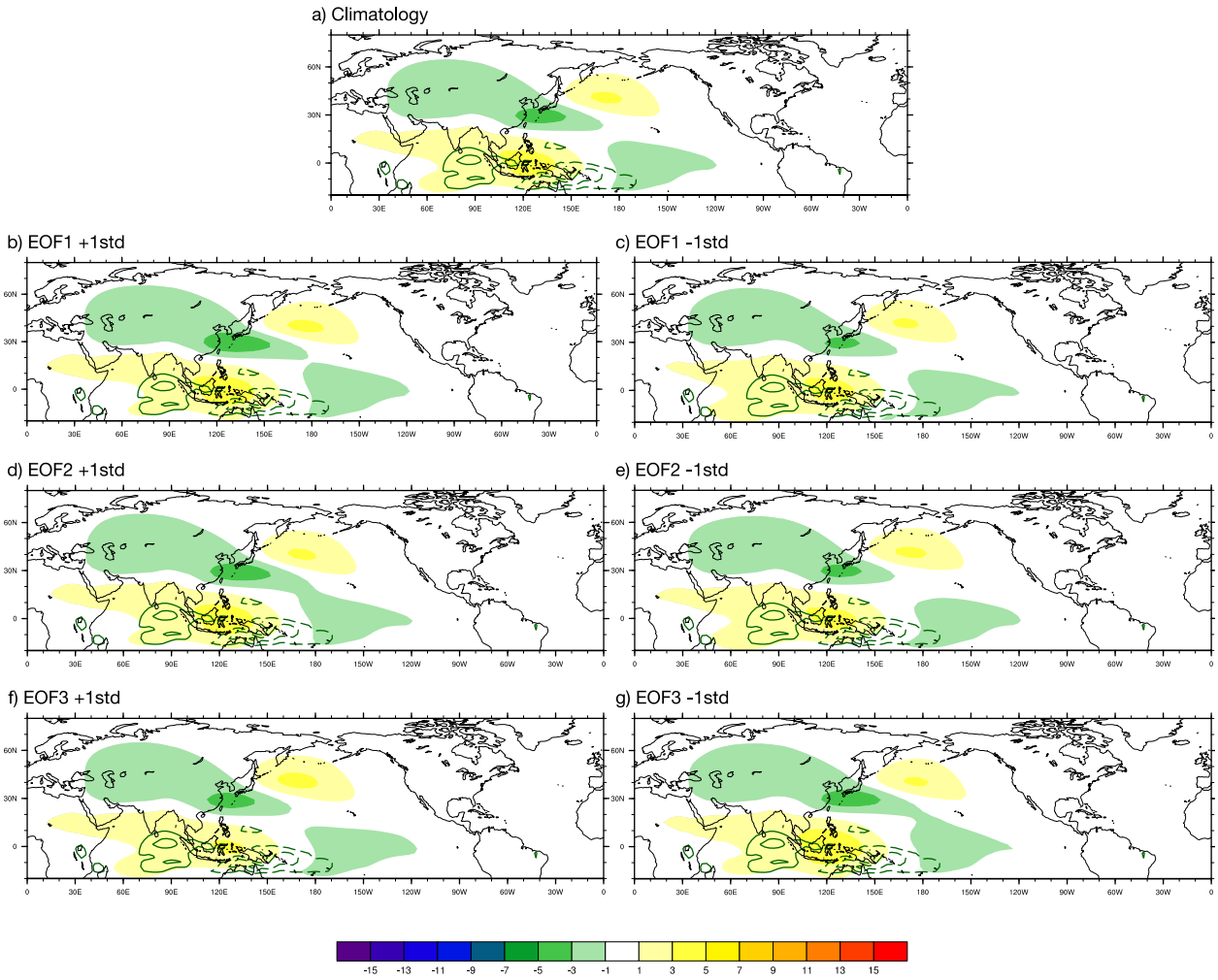


FIG. S9. The shadings show that geopotential height anomaly at day 2 for PHASE2_15days experiment for different basic states. Similar to Fig. 5, the mean temperature tendency (the MJO heating as an external forcing for the model) from surface to 100-hPa is plotted in green contours (solid lines for positive contours and dash lines for negative contours) is plotted. Units in m.

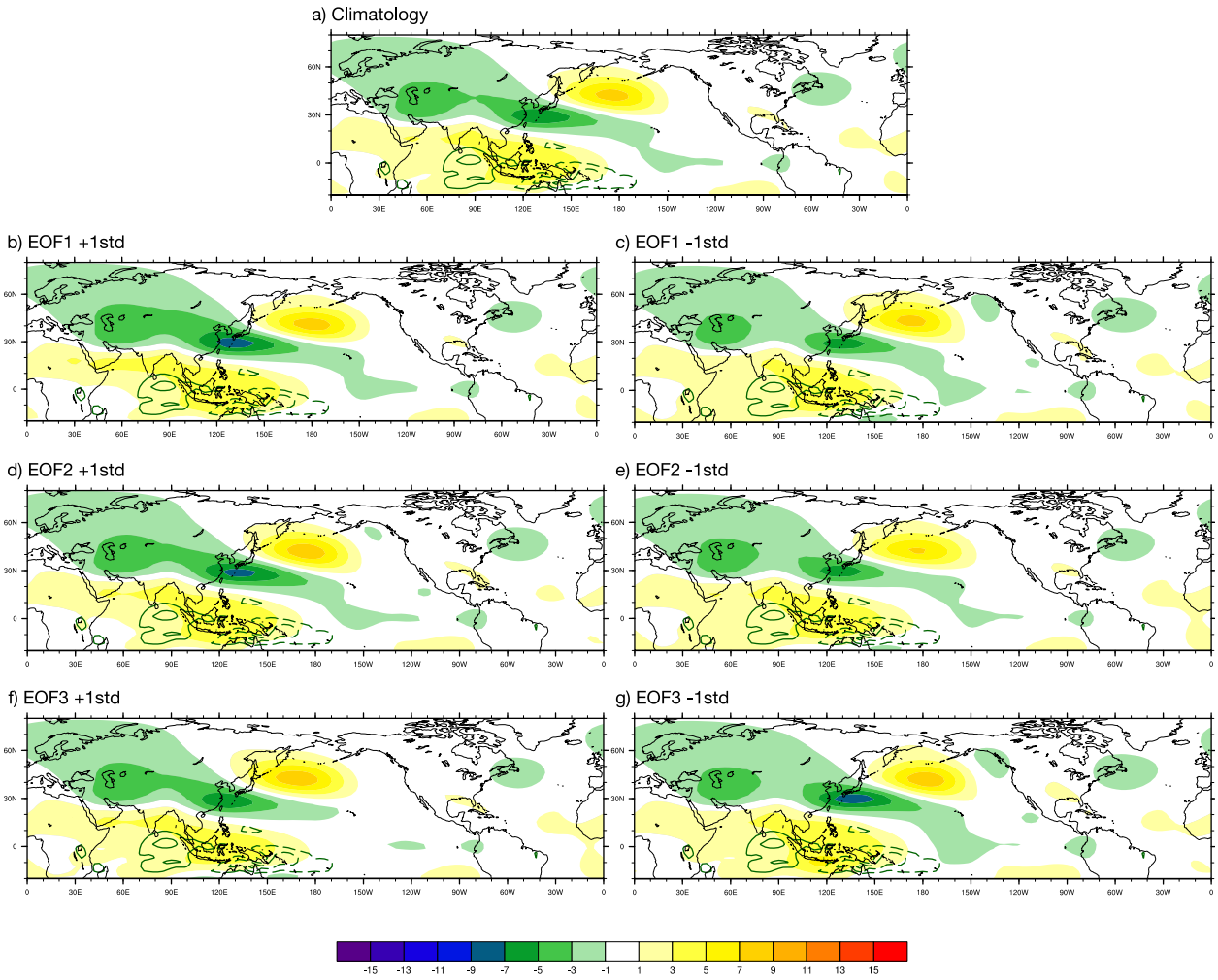


FIG. S10. The same as Fig. S9, but for day 4.

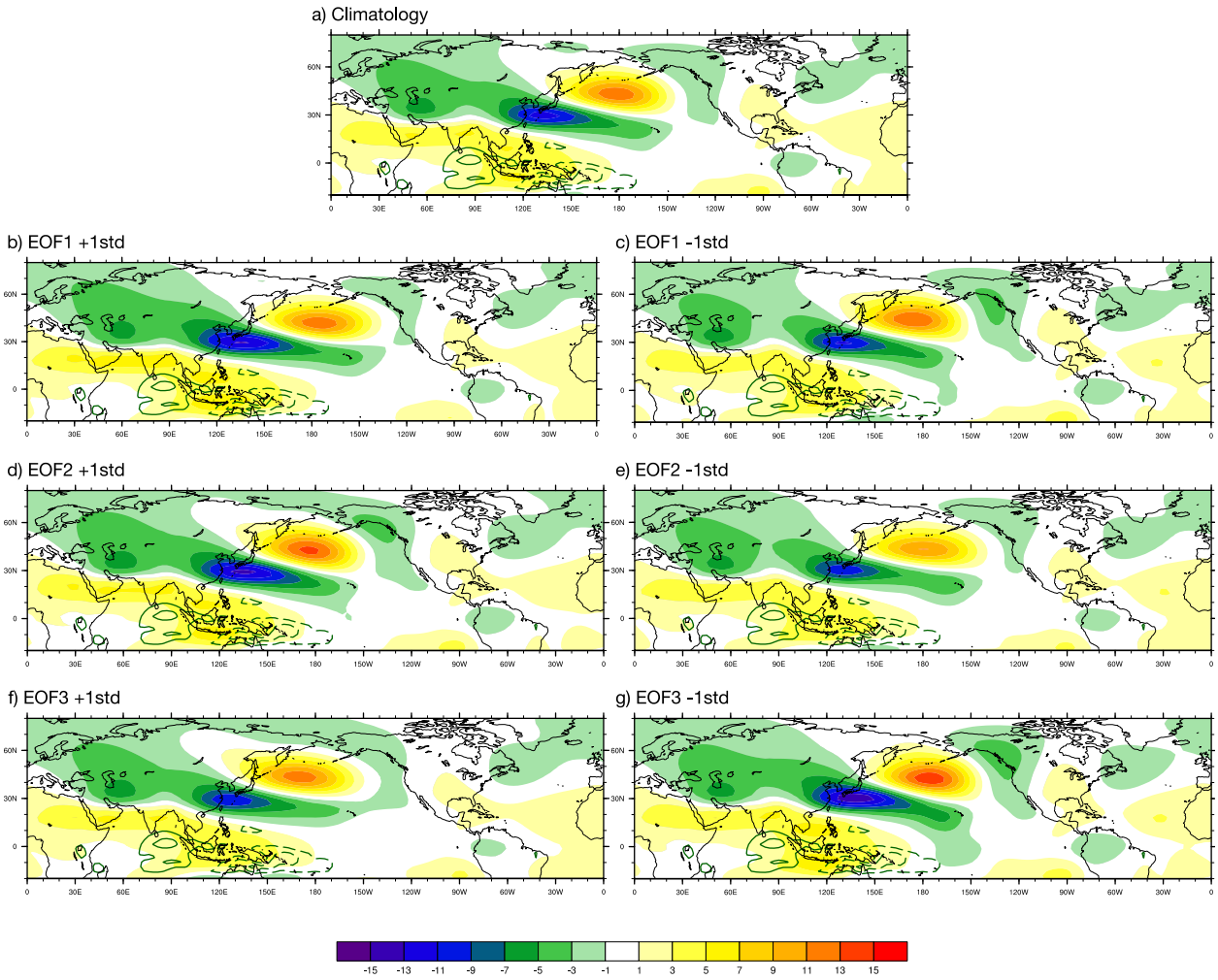


FIG. S11. The same as Fig. S9, but for day 6.

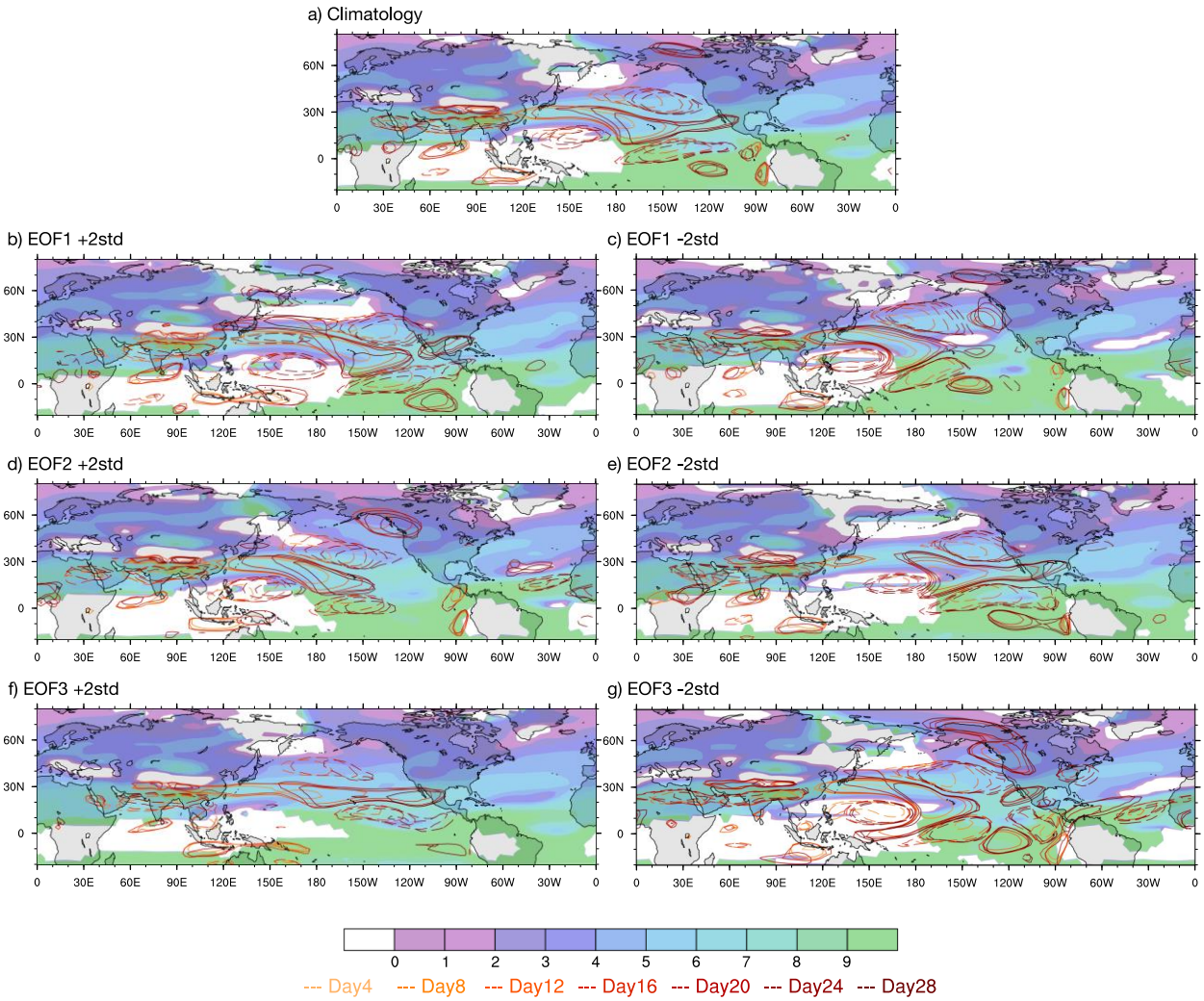


FIG. S12. Similar to Fig. 7 in the main text, but for basics states with 2 standard deviations.

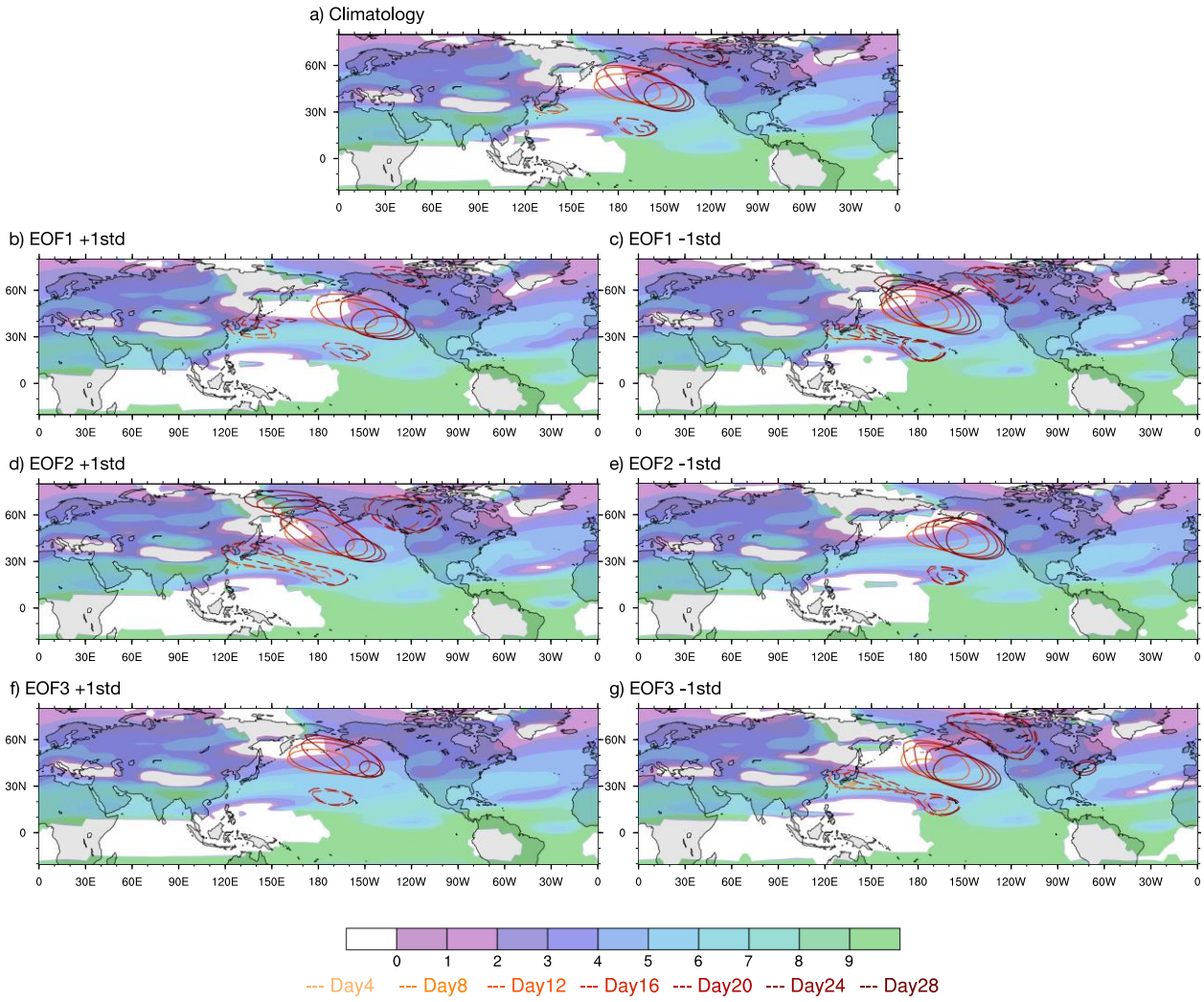


FIG. S13. Similar to Fig. 7 in the main text, but the contours are showing the geopotential height anomalies at 300-hPa. The solid and dashed contours are +20 and -20 m respectively.

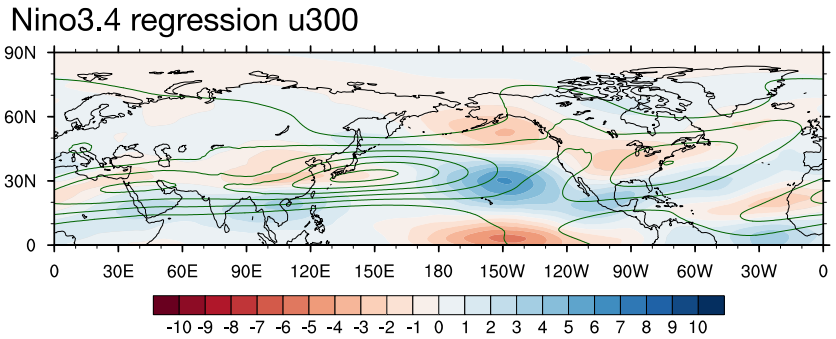


FIG. S14. Similar to Fig.1, but for regression 300-hPa zonal wind onto Nino 3.4 index.