



*Supplement of*

## **A new look at the jet-storm track relationship in the North Pacific and North Atlantic**

**Nora Zilibotti et al.**

*Correspondence to:* Nora Zilibotti (nora.zilibotti@env.ethz.ch)

The copyright of individual parts of the supplement might differ from the article licence.

# 1 Supplement

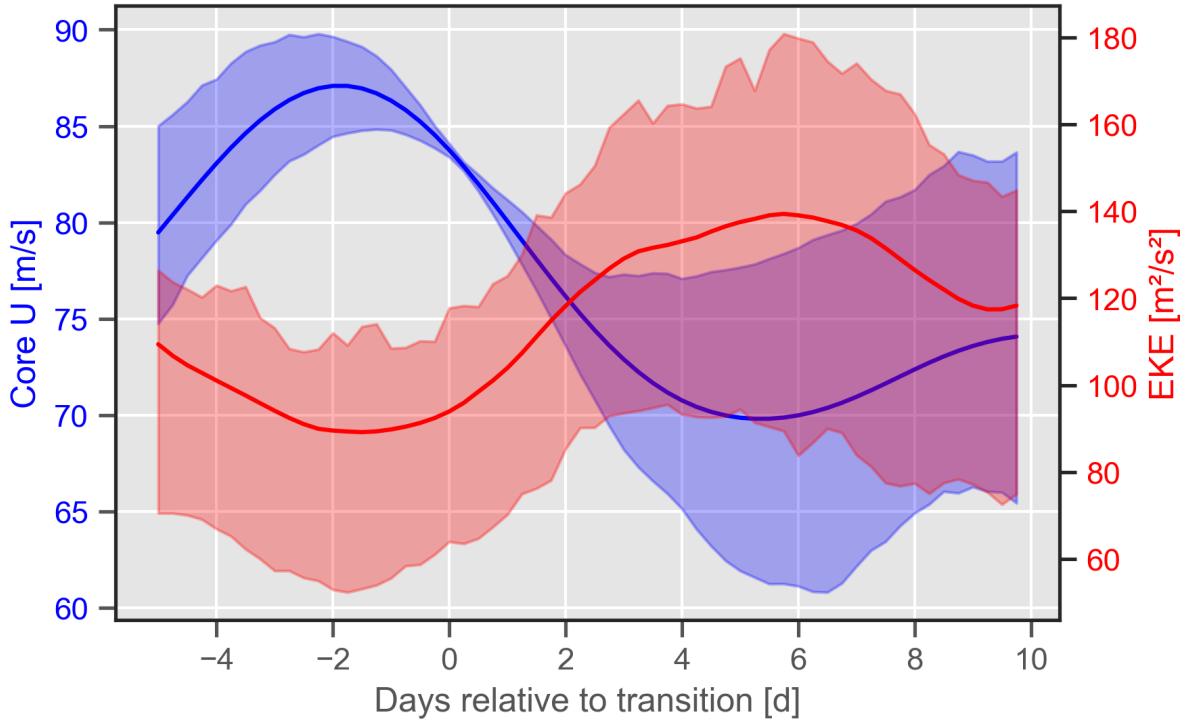


Figure S1: Temporal evolution of the 2-day running mean of  $U$  and EKE in the NP domains after transitions of  $U$  from the upper to middle tercile in DJF. The solid lines represent the mean of all events at each lag, while the shading represents the inter-quartile range of all events.

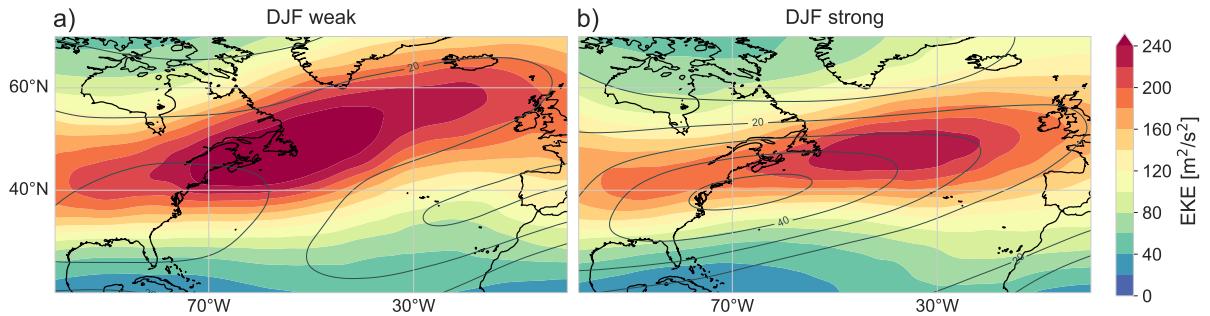


Figure S2: EKE at 300 hPa (shading) and 10-d low-pass filtered zonal wind at 250 hPa ( $U$ , gray contours, every  $10 \text{ m s}^{-1}$ ) in the NA for weak (a) and strong (b) jet timesteps.

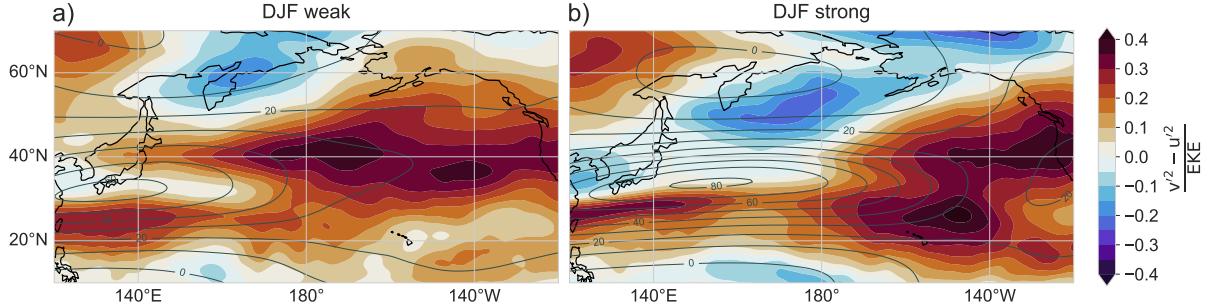


Figure S3: Eddy orientation measure,  $v'^2 - u'^2$  normalized by EKE (shading) and the 10-d low-pass filtered zonal wind on 250 hPa ( $U$ , gray contours) for weak (a) and strong (b) jet timesteps in the NP.

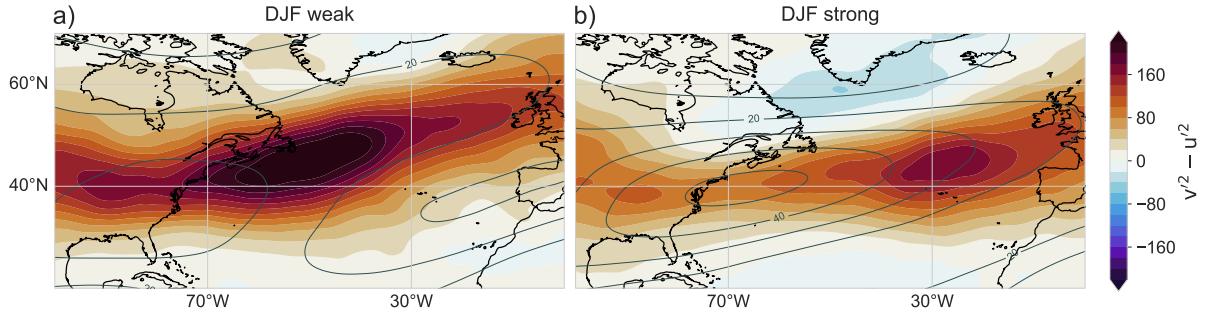


Figure S4: Unnormalized eddy orientation measure,  $v'^2 - u'^2$  (shading) and the 10-d low-pass filtered zonal wind on 250 hPa ( $U$ , gray contours) for weak (a) and strong (b) jet timesteps in the NA

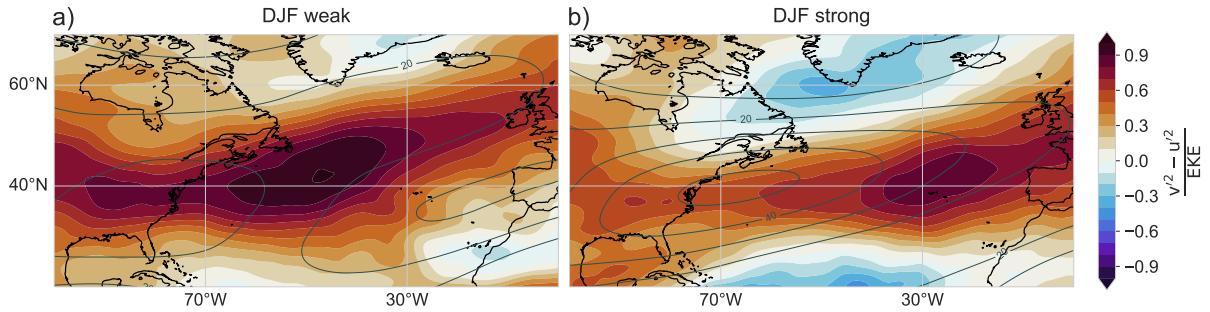


Figure S5: As Fig. S3 but for the NA.

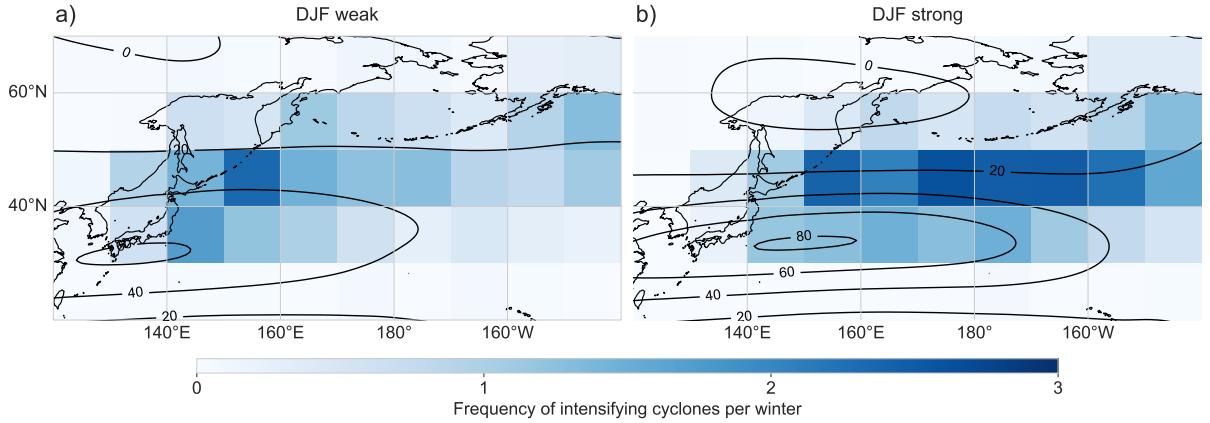


Figure S6: 10-day low-pass filtered zonal wind at 250 hPa ( $U$ ) and area-weighted annual frequency of cyclones at their time of maximum 12-hourly intensification in the NP. Frequencies are computed separately for time steps belonging to the weakest (left) and strongest (right) tercile of  $U$ .

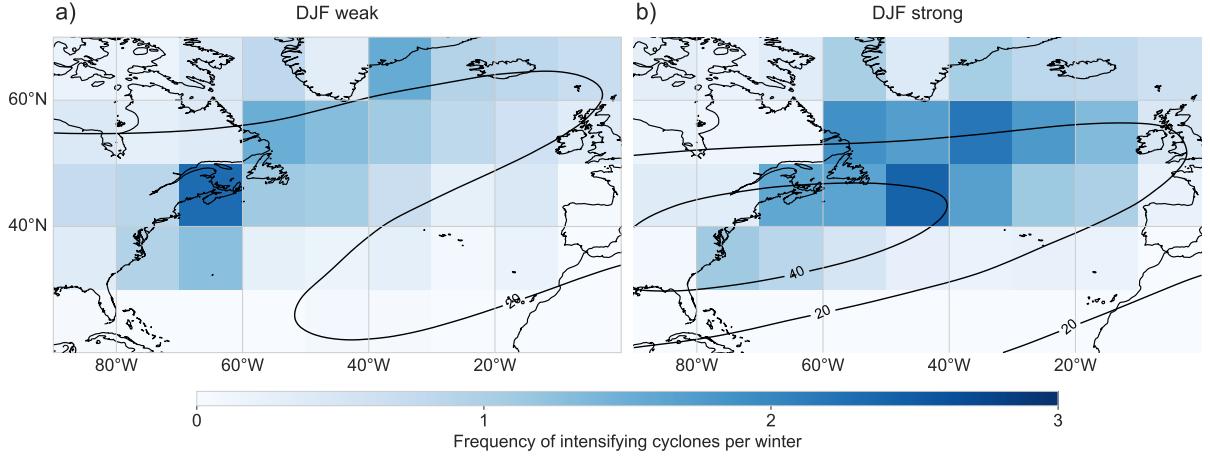


Figure S7: As Fig. S6 but for the NA.

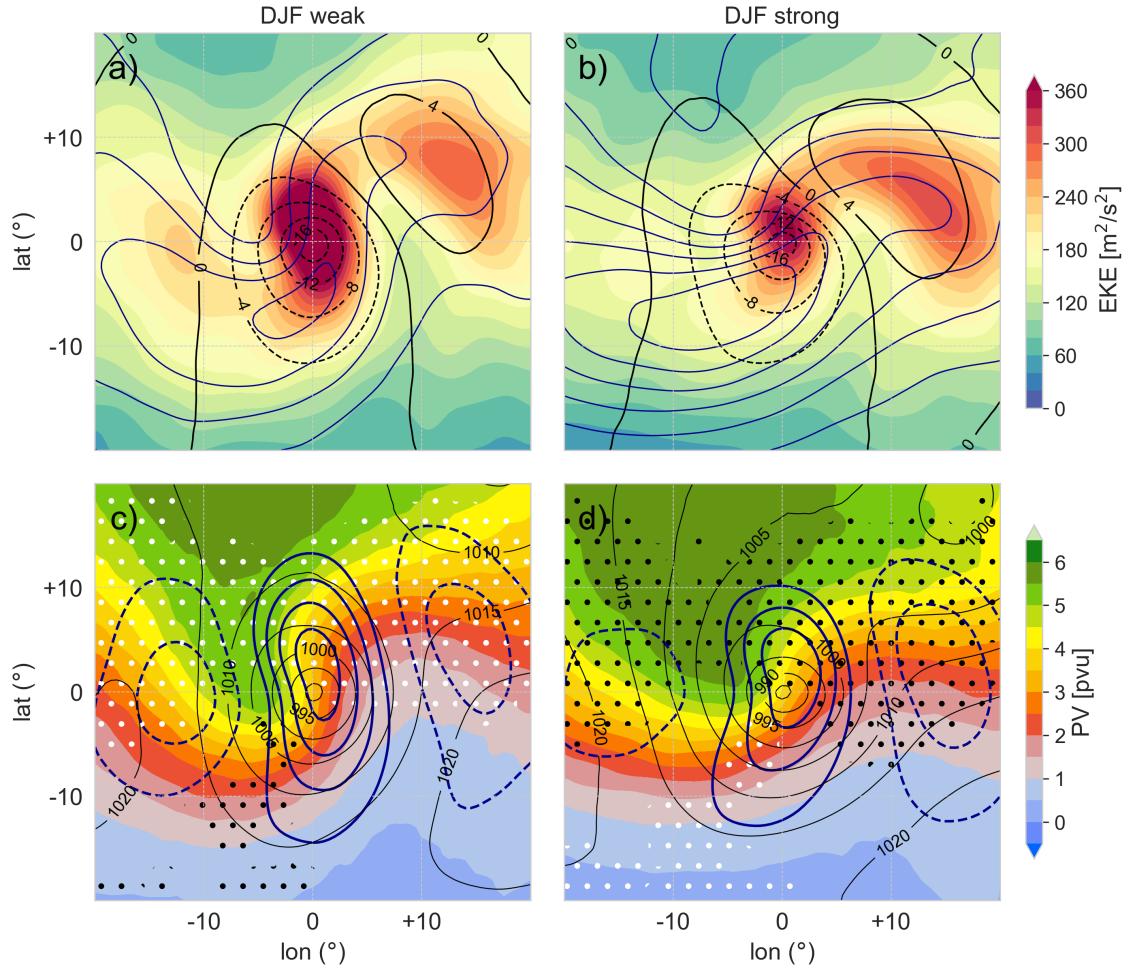


Figure S8: Cyclone-centered composites of cyclones at their time step of maximal 12-h intensification in the NA domain. Shown are cyclones with maximal intensification during time steps belonging to the weak (**a,c**) and strong  $U$  (**b,d**) terciles. (**a,b**) show the 300 hPa EKE in shading, the high-pass filtered SLP in black contours (every 4 hPa) and the total kinetic energy at 250 hPa in blue contours (every  $200 \text{ m}^2 \text{ s}^{-2}$ ). The innermost total kinetic energy contour is  $1400 \text{ m}^2 \text{ s}^{-2}$  in (a) and  $2200 \text{ m}^2 \text{ s}^{-2}$  in (b). (**c,d**) show PV on 320 K in shading, SLP in black contours (every 5 hPa), and the high-pass filtered meridional wind at 300 hPa in blue contours (every  $5 \text{ m s}^{-1}$ ). The significance of a positive (negative) PV anomaly with respect to the PV distribution of all DJF cyclones on a 1% level is shown by black (violet) stippling.