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Supporting Information for

**Application of the Cyclone Phase Space to Extratropical Transition in a
Global Climate Model**

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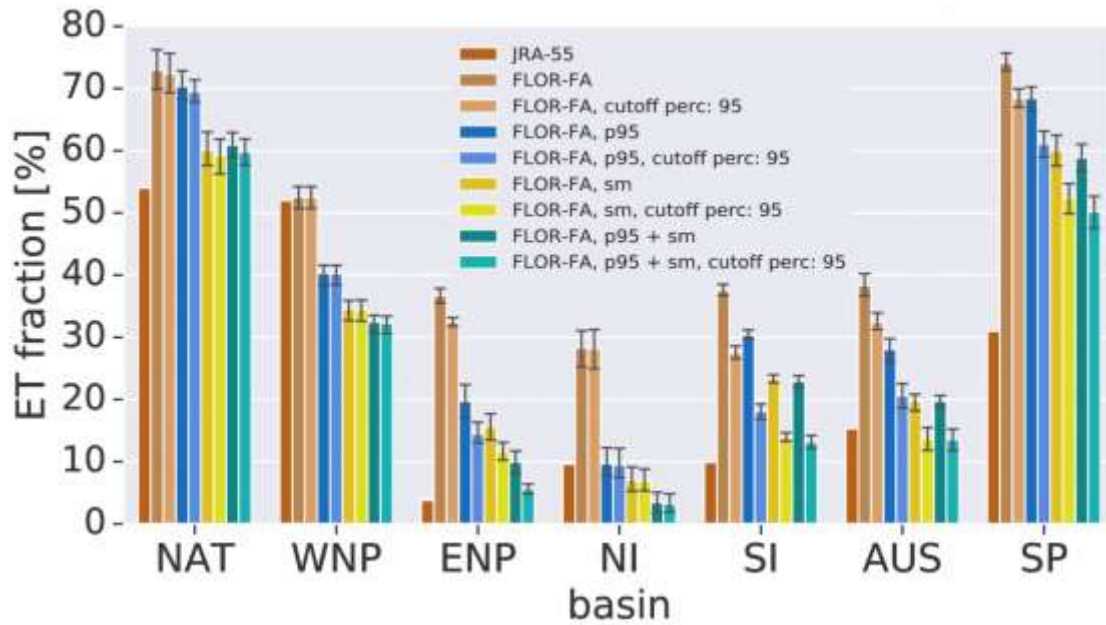


Figure S1. Global ET fractions (1979-2005) from JRA-55 and FLOR-FA, in the North Atlantic (NAT), western North Pacific (WNP), eastern North Pacific (ENP), North Indian Ocean (NI), South Indian Ocean (SI), Australian region (AUS), and South Pacific (SP). The FLOR-FA ET fractions are shown for the four FLOR-FA datasets that result from the different methods of diagnosing ET as described in the paper (unmodified, p95, smoothed, p95 + smoothed), and for both the original tracks and the shortened tracks. The shortened tracks were obtained by cutting the FLOR-FA tracks poleward of fixed, basin-specific threshold latitudes, defined as the 95th percentiles of the distributions of best track end point latitudes ("cutoff perc: 95"). The cutoff latitudes are: 58.0°N in the NAT, 55.0°N in the WNP, 30.5°N in the ENP, 26.0°N in the NI, 36.2°S in the SI, 32.9°S in the AUS, and 39.9°S in the SP basin. The error bars show the 95% confidence interval estimated from five ensemble members.

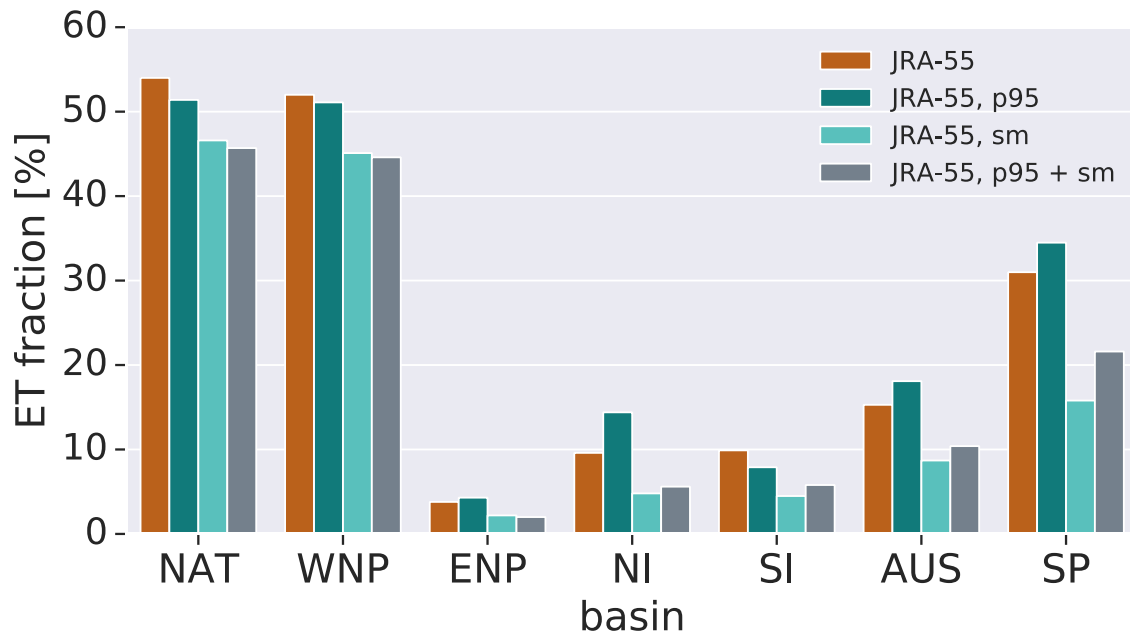
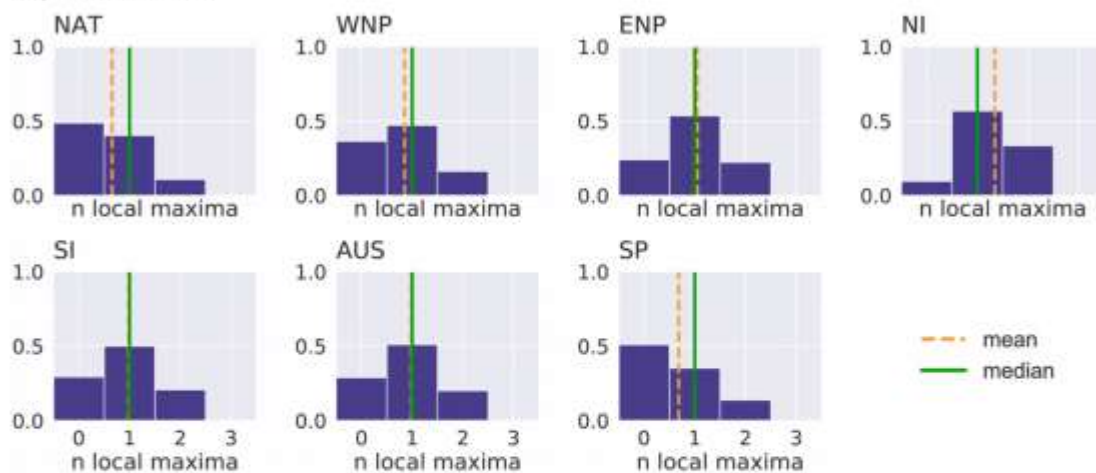
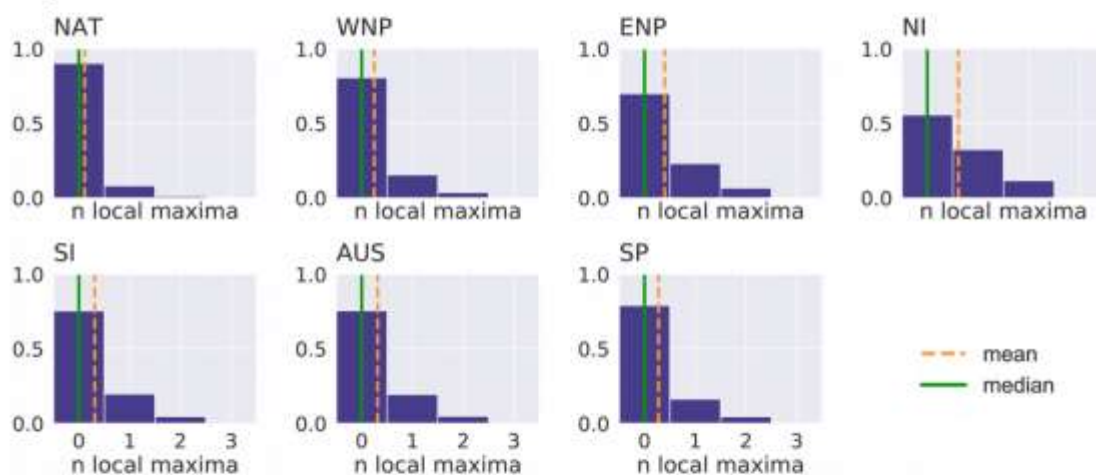


Figure S2. Global ET fractions (1979-2005) from JRA-55, in the North Atlantic (NAT), western North Pacific (WNP), eastern North Pacific (ENP), North Indian Ocean (NI), South Indian Ocean (SI), Australian region (AUS), and South Pacific (SP). The fractions are shown for the four methods of diagnosing ET as described in the paper (unmodified, p95, smoothed, p95 + smoothed).

a) 300 hPa



b) 500 hPa



b) 850 hPa

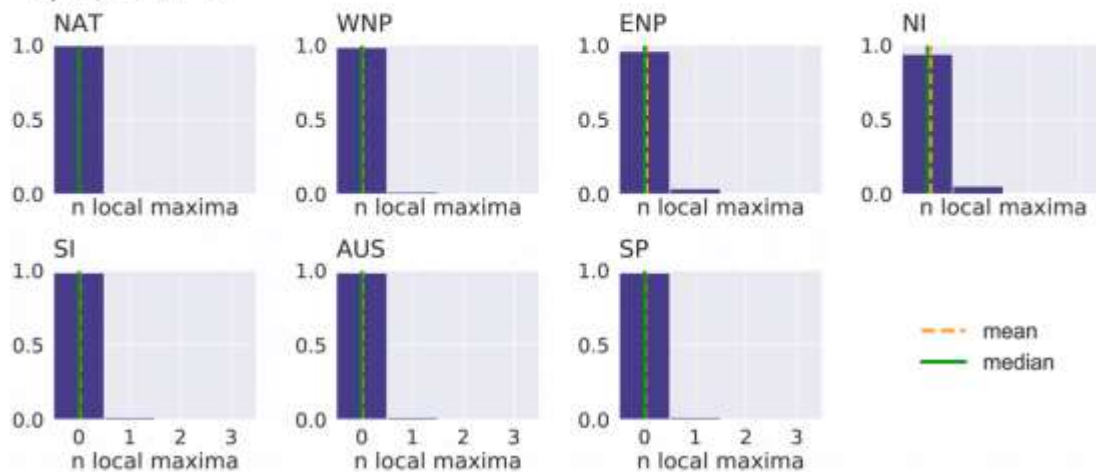


Figure S3. Histograms of the number of strong local maxima in six-hourly geopotential height fields within 500 km of the storm center in FLOR-FA, at a) 300 hPa, b) 500 hPa, and c) 850 hPa. A “strong” local maximum is defined here as one that exceeds the 95th percentile of the geopotential height field under consideration. Points on the boundary of the domain are excluded. The histograms show the data from all TCs in the period 1979-2005, in the North Atlantic (NAT), western North Pacific (WNP), eastern North Pacific (ENP), North Indian Ocean (NI), South Indian Ocean (SI), Australian region (AUS), and South Pacific (SP). The histograms show the data from all five FLOR-FA ensemble members over the time period 1976-2005.