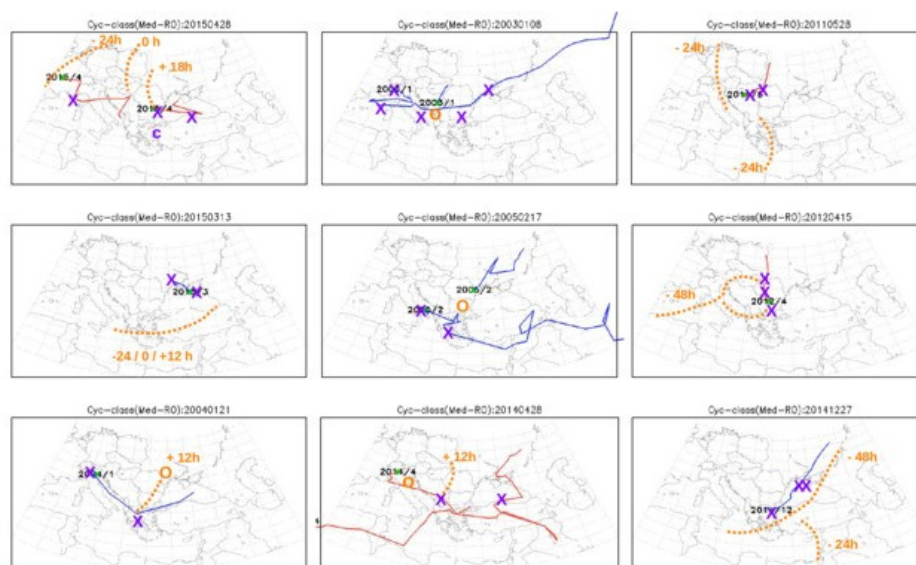
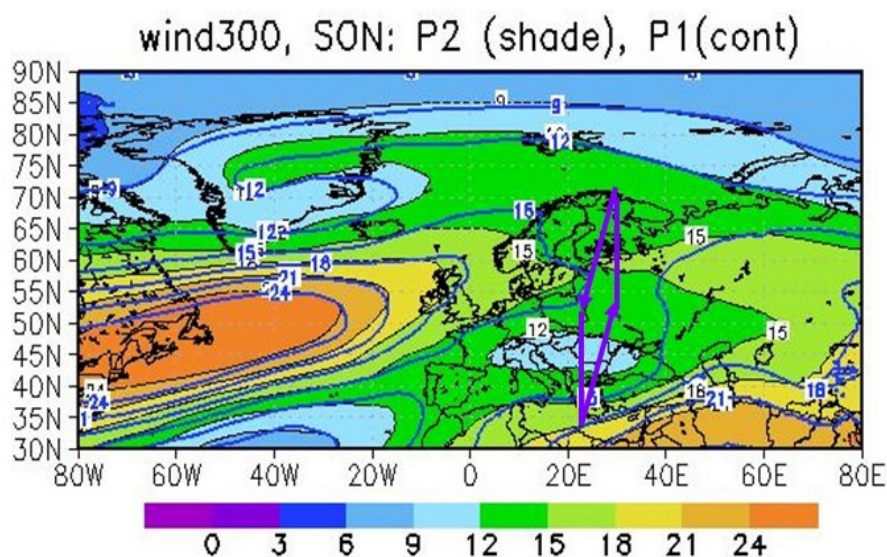


# Supplementary Materials: Recent Changes in Storm Track over the Southeast Europe: A Mechanism for Changes in Extreme Cyclone Variability

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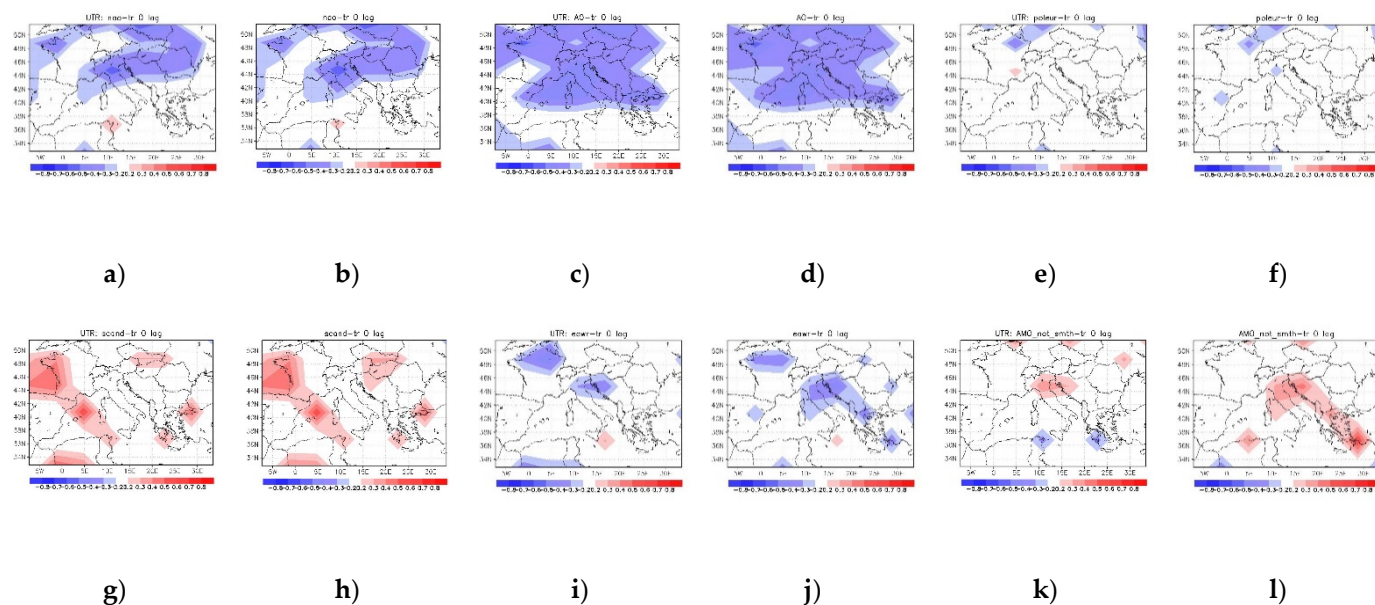
**Figure S1.** Validation of storm track classes from Catrina et al, 2019. Computed trajectories are blue/ red lines for winter/ summer events; plum cross represents the track position from meteorological analysis in (Catrina et al, 2019); orange circle represents secondary cyclonic forcing position present in the same time, interacting with the track, but not identified as cyclone center; orange dot lines indicate larger-scale context previous or during to the track (lead time is written in orange, in hours).



**Figure S2.** Represents the same as in Figure 11 for average months SON. In plum is schematised the ageostrophic coupled circulation of the two jets.

**Table S1.** Trends of atmospheric modes ( $\text{year}^{-1}$ ) over P0, P1 and P2 for the two seasons ONDJFM (w) and AMJJAS (s) (modes index data from <https://www.cpc.ncep.noaa.gov/products/precip/Cwlink>, accessed on 8 August 2021). Trends below 0.01 in absolute value are only specified as sign.

mode	P0 w	P0 s	P1 w	P1 s	P2 w	P2 s
nao	+	-	+	-	0.050	-
AO	+	+	0.024	-	0.037	-
PE	-0.019	-	0.018	+	-0.021	-0.020
SCAN	+	-	+	+	-	-0.022
EA	0.013	0.032	+	+	+	0.037
EAWR	-	-0.021	0.017	0.015	-	-0.036
AMOs	0.012	0.013	0.012	0.012	+	+
AMOns	0.012	0.011	0.014	0.013	+	+
AMOna	0.012	0.011	0.015	0.014	+	+



**Figure S3.** Yearly correlations over P0: 0 lag between yearly means of the atmospheric modes and the mean number of tracks in boxes of 6x4 degrees lon/lat. The modes are: NAO (a,b), AO (c,d), PE (e,f), SCAND (g,h), EAWR (i,j), AMO (k,l). For each mode, the first plot is for detrended data (a,c,e,g,i,k), second for trended (b,d,f,h,j,l).