

## **Supplemental Material**

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c) WR=NAO+ filtered V\_sm\_s/c\_p NDJFM (K m/s)

- b) WR=RIDGE filtered V\_sm\_s/c\_p (K m/s)
- d) WR=NAO- filtered V\_Sm\_s/c\_p NDJFM (K m/s)



Figure S1: As in figure 3 but for the heat flux filtered with a 9 day running mean.





Figure S3: a-b) As in figure 4a but for the low frequency heat flux. c-d) As in figure 4b but for the low frequency heat flux.



Figure S5: Zonal mean of the instantaneous heat flux anomaly (total) at 850 hPa for the 4 weather regimes.