



Supplement of

Assessing Lagrangian coherence in atmospheric blocking

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Additional Figures

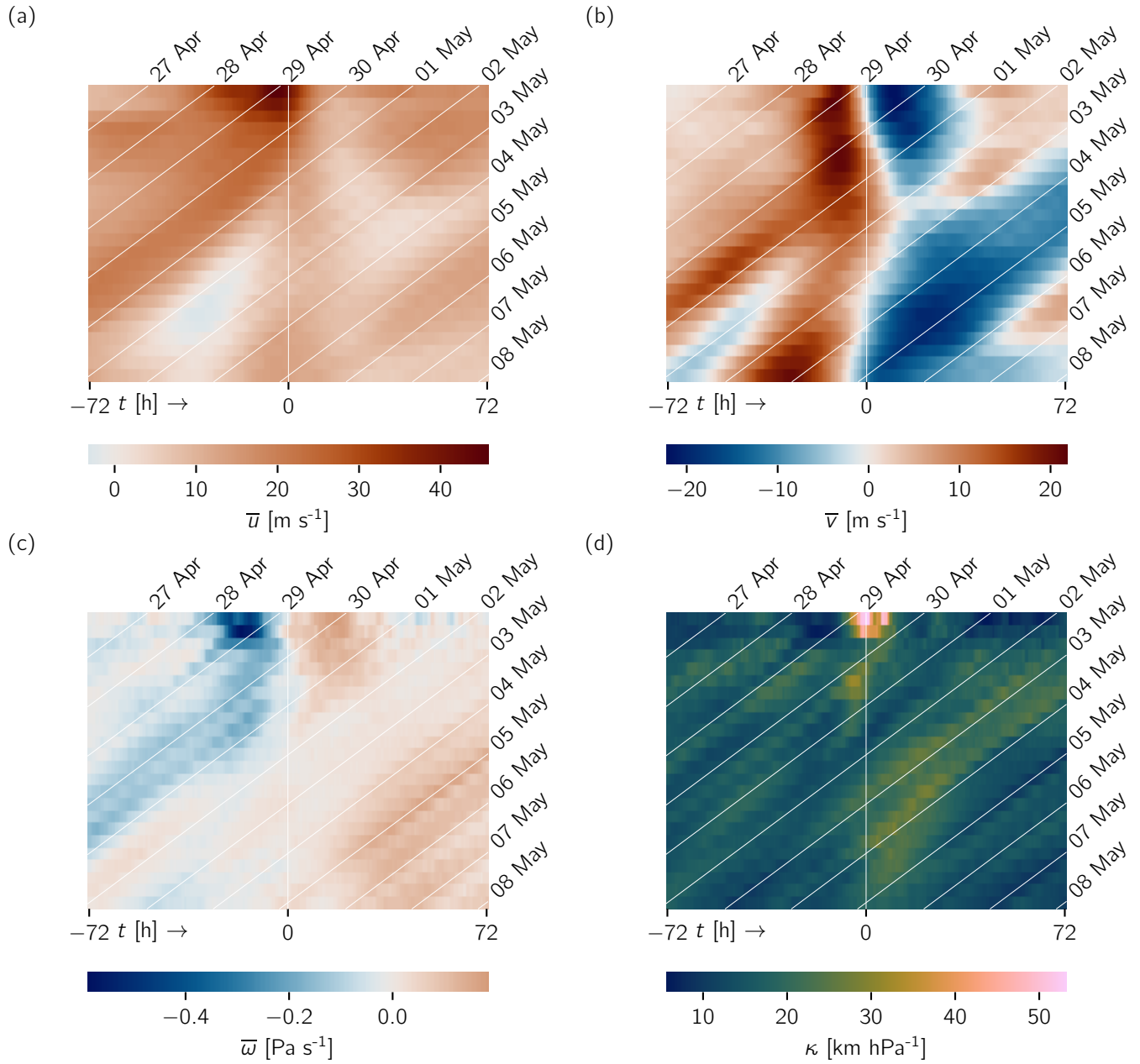


Figure S1: (a) & (b) mean average horizontal velocities, (c) average vertical velocities and (d) average κ plotted as a function of initialization time (24 initializations, vertical axis) and time step (144 time steps from -72 h to +72 h, horizontal axis) for the Canada 2016 case. White diagonals indicate isochrones (all 00 UTC). Vertical white line indicates initialization time.

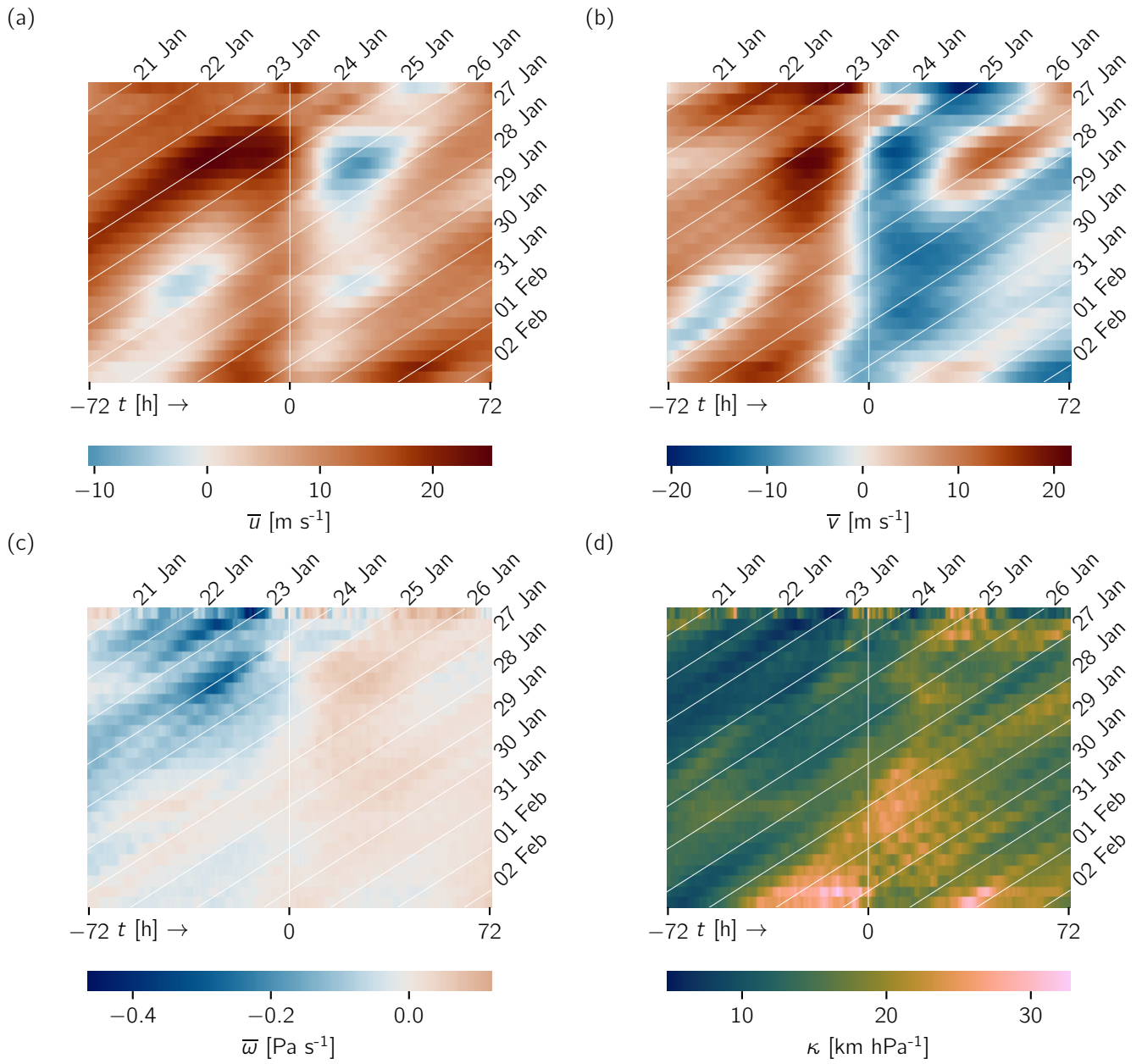


Figure S2: Same as Fig. S1, but for the 2017 Northern Europe case.

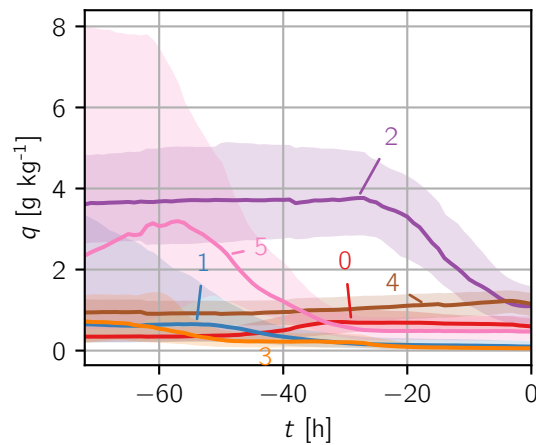


Figure S3: (a): Median (line) and interquartile range (shading) of specific humidity distribution among individual clusters from Fig. 5 (trajectories initialized in the Canadian blocking at 02 May 2016 00 UTC). Residual cluster (gray) not shown.

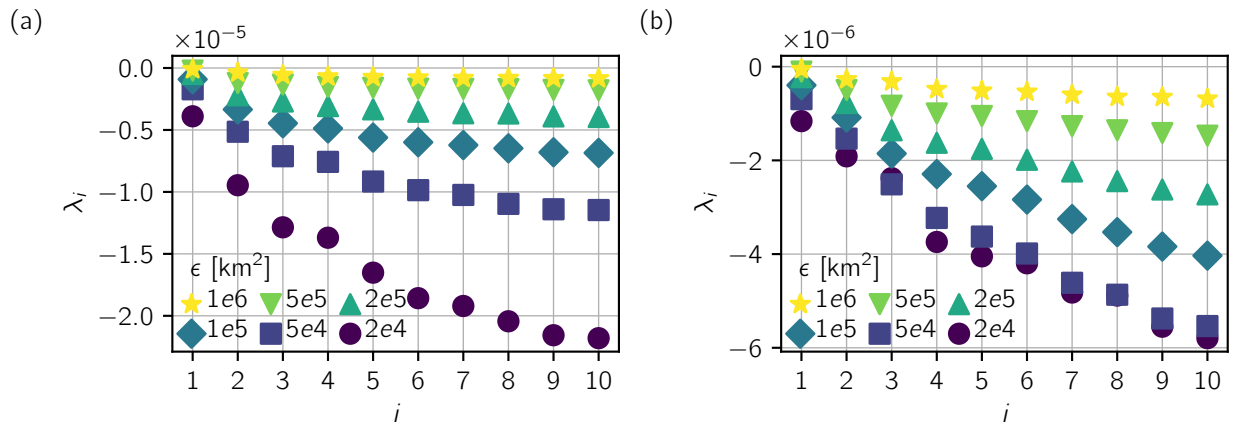


Figure S4: 10 largest eigenvalues of L_ϵ for various values of ϵ for trajectories initialized at (a) 04 May 2016 00 UTC in the Canadian blocking and (b) 26 January 2017 18 UTC in the Northern Europe blocking.

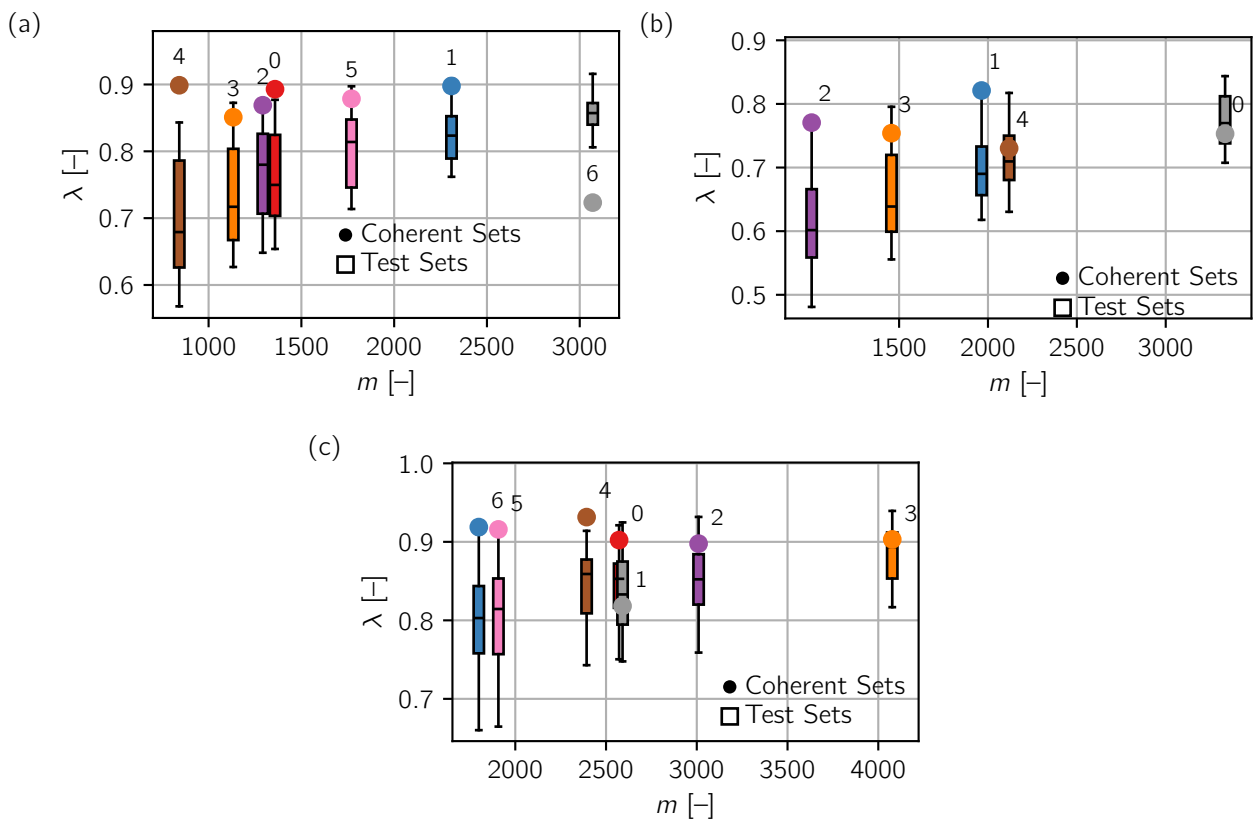


Figure S5: The largest eigenvalue of the restricted matrices $Q_\epsilon(\mathcal{I}_k, \mathcal{I}_k)$ pertaining to the coherent/residual sets found at (a) 02 May 2016 00 UTC and (b) 04 May 2016 00 UTC in the Canadian blocking and (c) 26 January 2017 18 UTC in the Northern Europe blocking (full circles). For each of the sets, the distribution of largest eigenvalues for 100 randomly generated test sets of the same size is presented by a box-whiskers plot. These show the median (horizontal line), first and third quartiles (box limits) and the farthest data point lying within 1.5 times the interquartile range from the box (whiskers).