Supplementary materials

Forecasting and Identifying the Meteorological and Hydrological Conditions Favoring the Occurrence of Severe Hazes in Beijing and Shanghai using Deep Learning

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Additional figures.

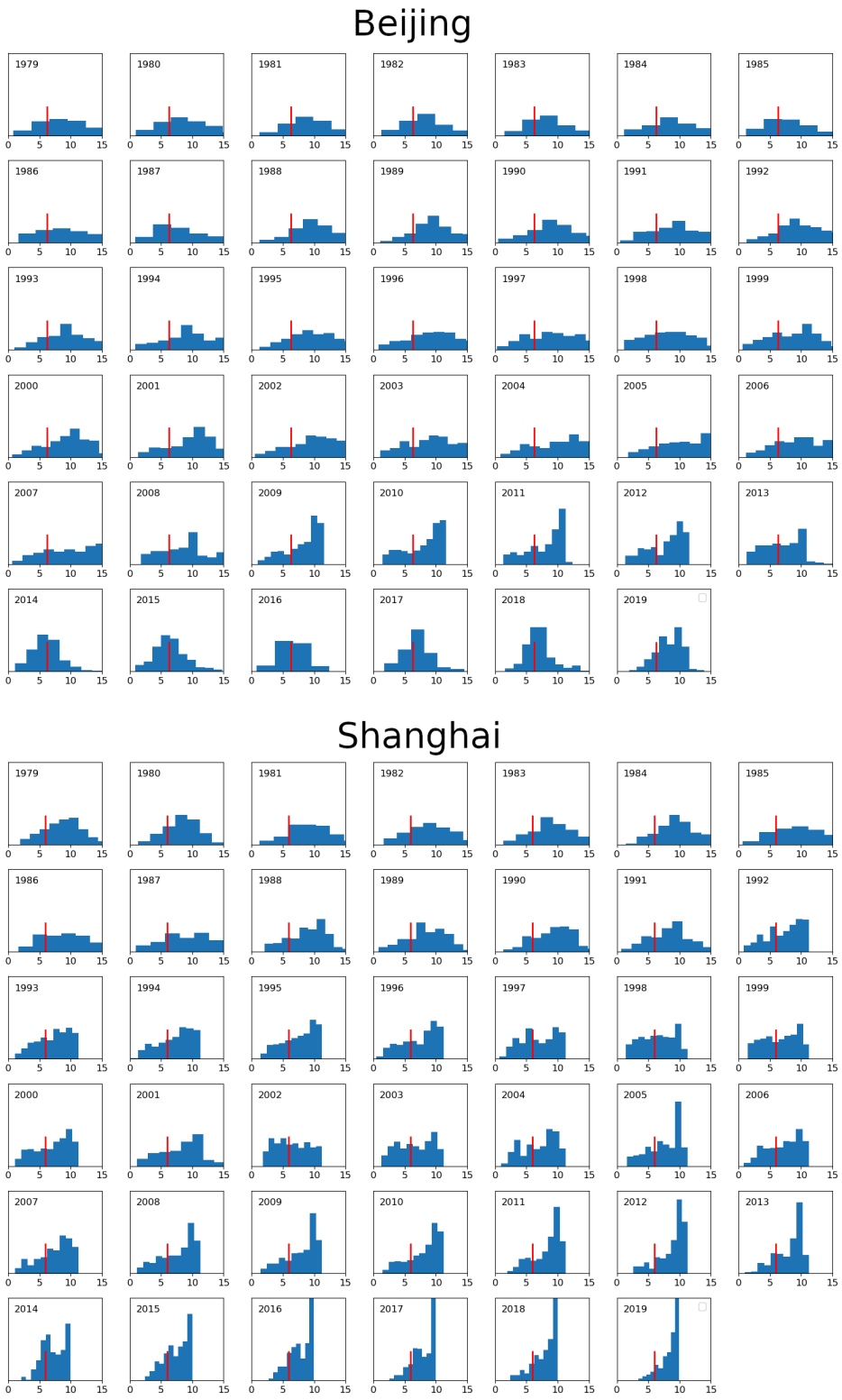

Figure S1. Histograms of surface visibility (in km) for each year from 1979 to 2019 of Beijing and Shanghai. Vertical scales of all panels are the same as [0, 0.4].

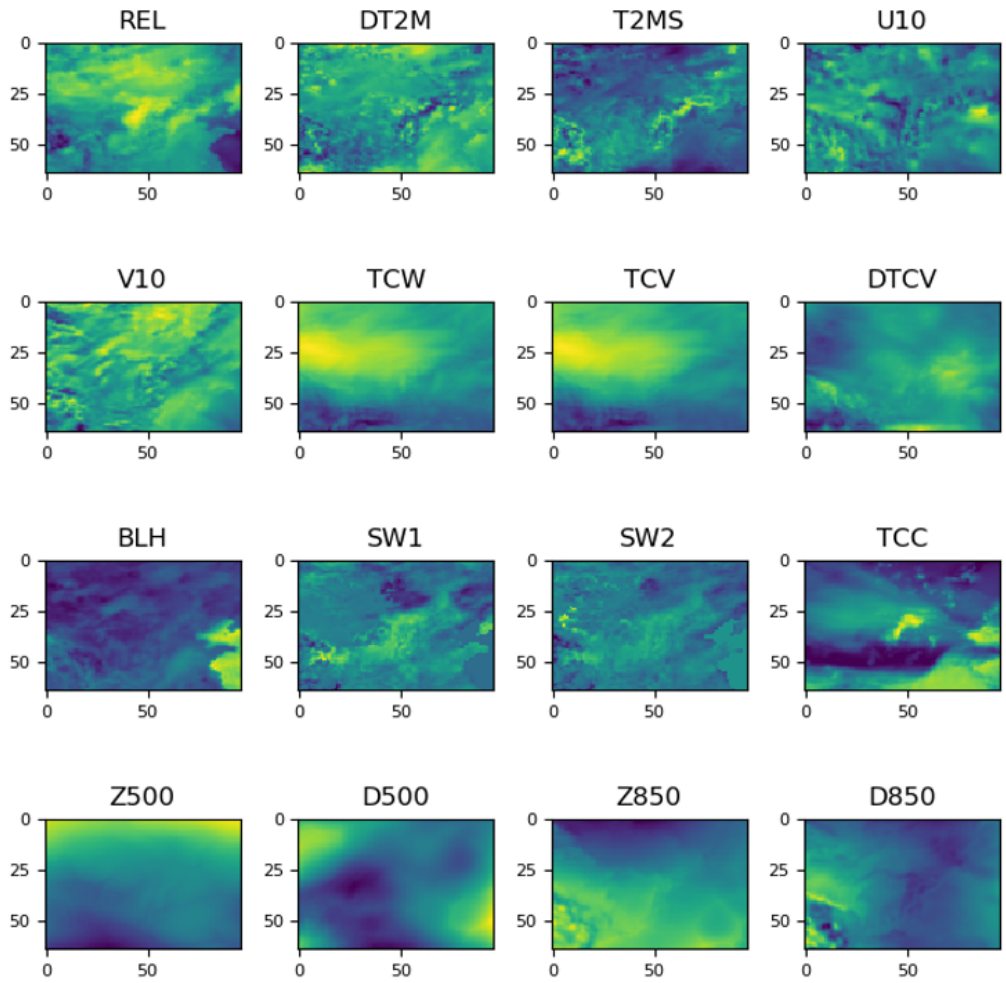

Figure S2. Examples of feature maps for Beijing cases, all have been normalized into [-1, +1] ranges.

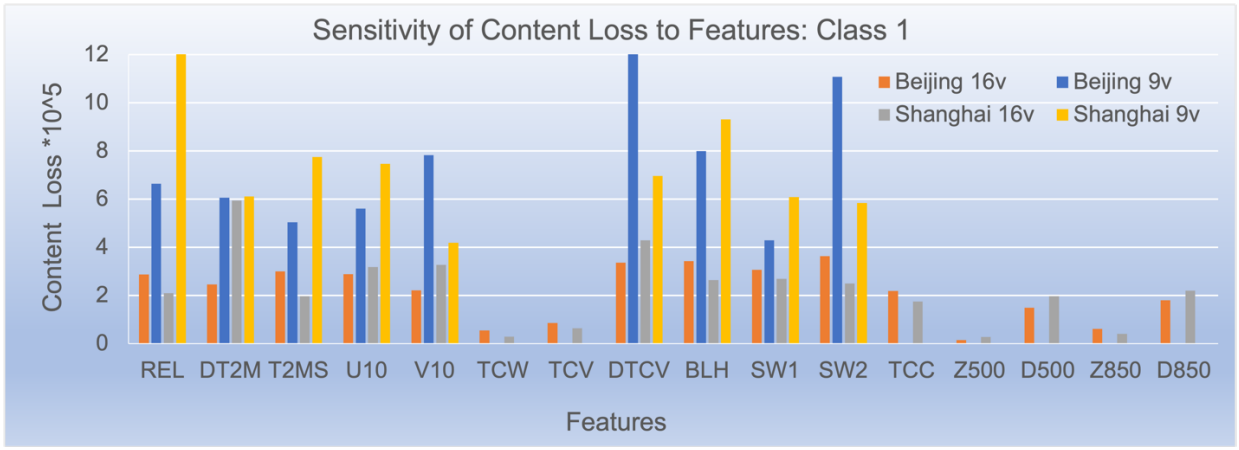

Figure S3. Sensitivity of the network output to various features, measured by the content loss in comparing randomly perturbed output with original output in Beijing and Shanghai haze cases. Shown are results for severe haze days, here 16v and 9v represent training with 16 and 9 features, respectively.

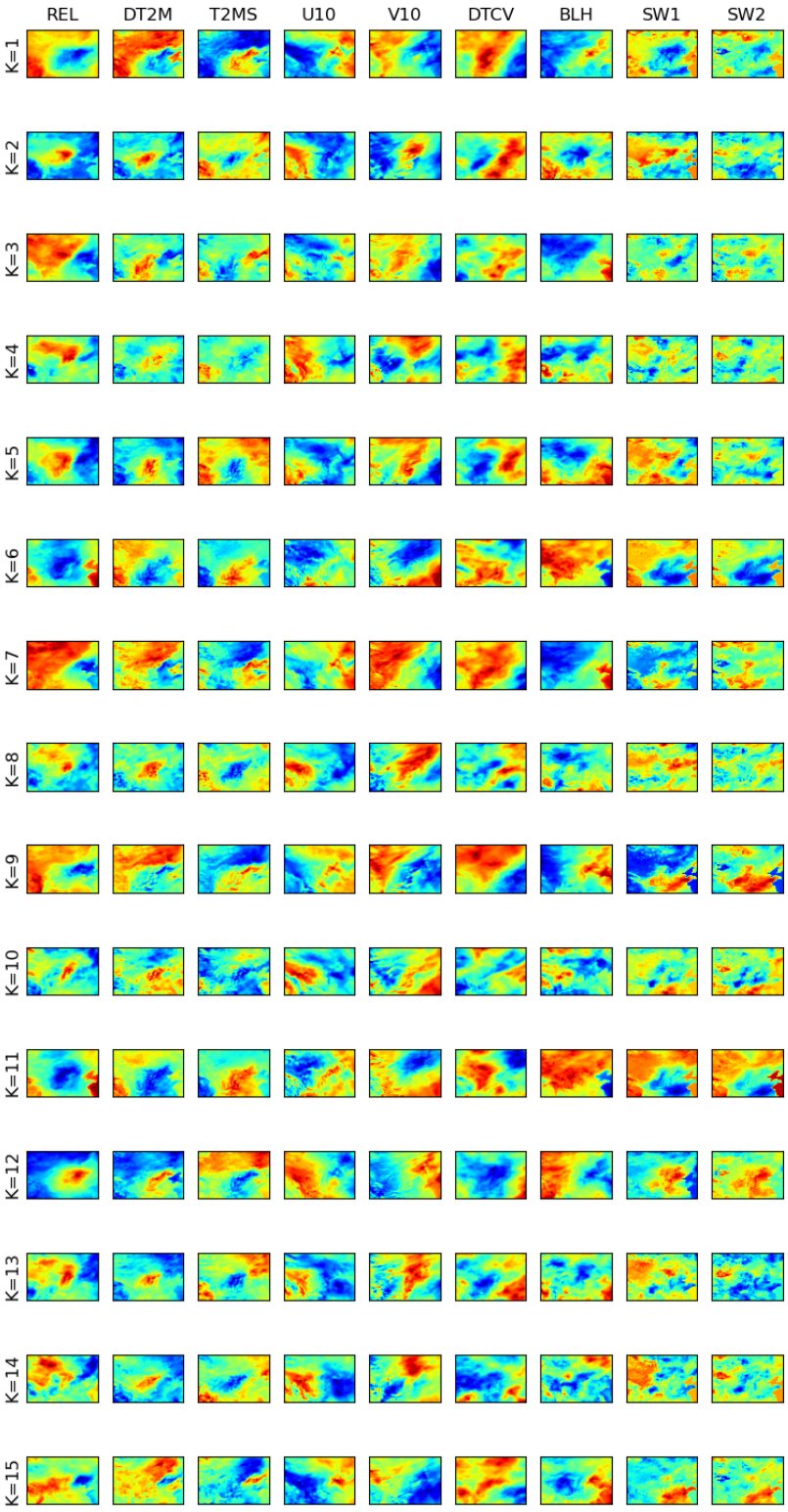

Figure S4. Cluster-mean feature maps in normalized format of 15 TN outcome clusters for Beijing cases.

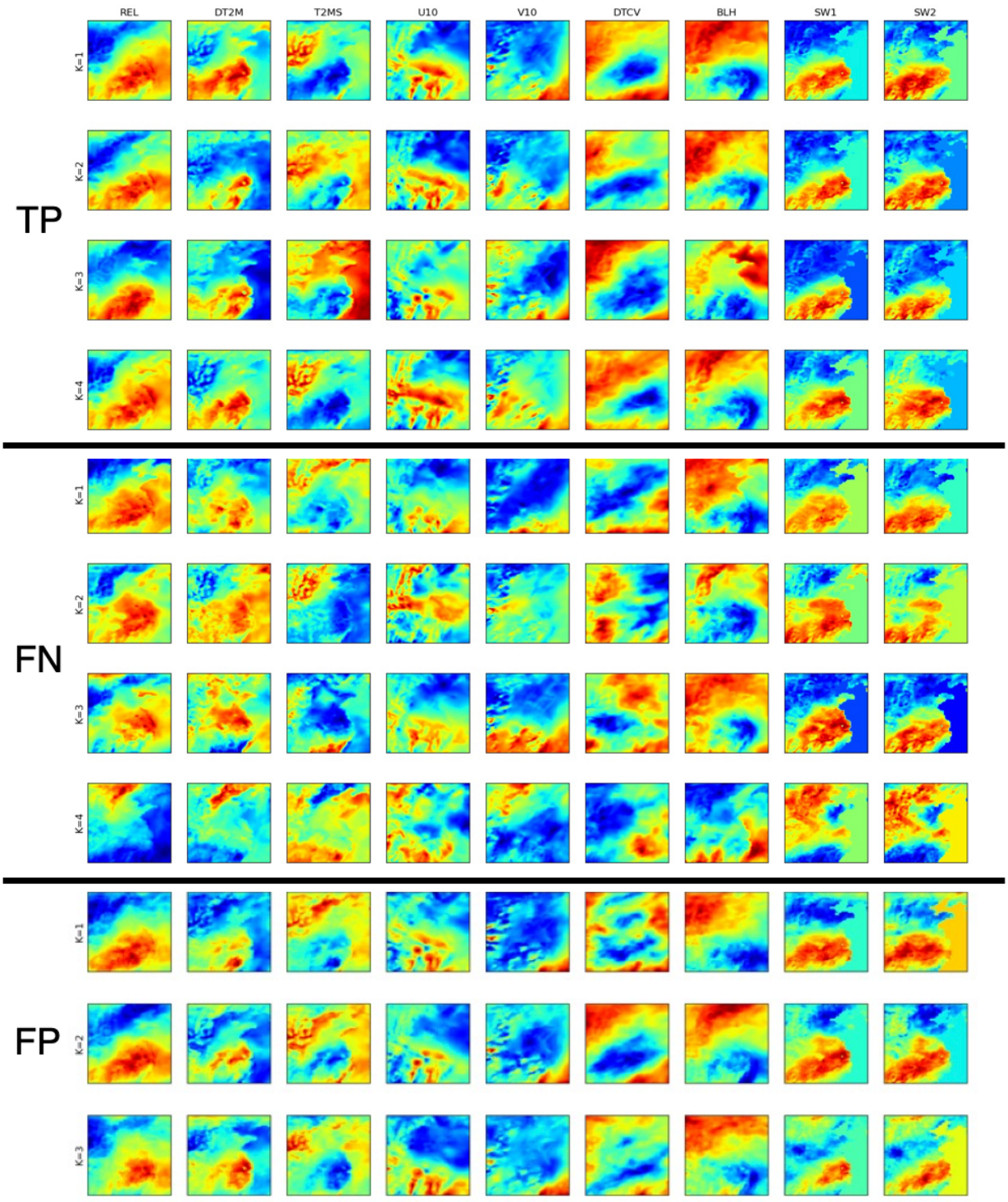

Figure S5. Cluster-mean feature maps in normalized format of TP, FN, and FP outcome clusters for Shanghai cases.

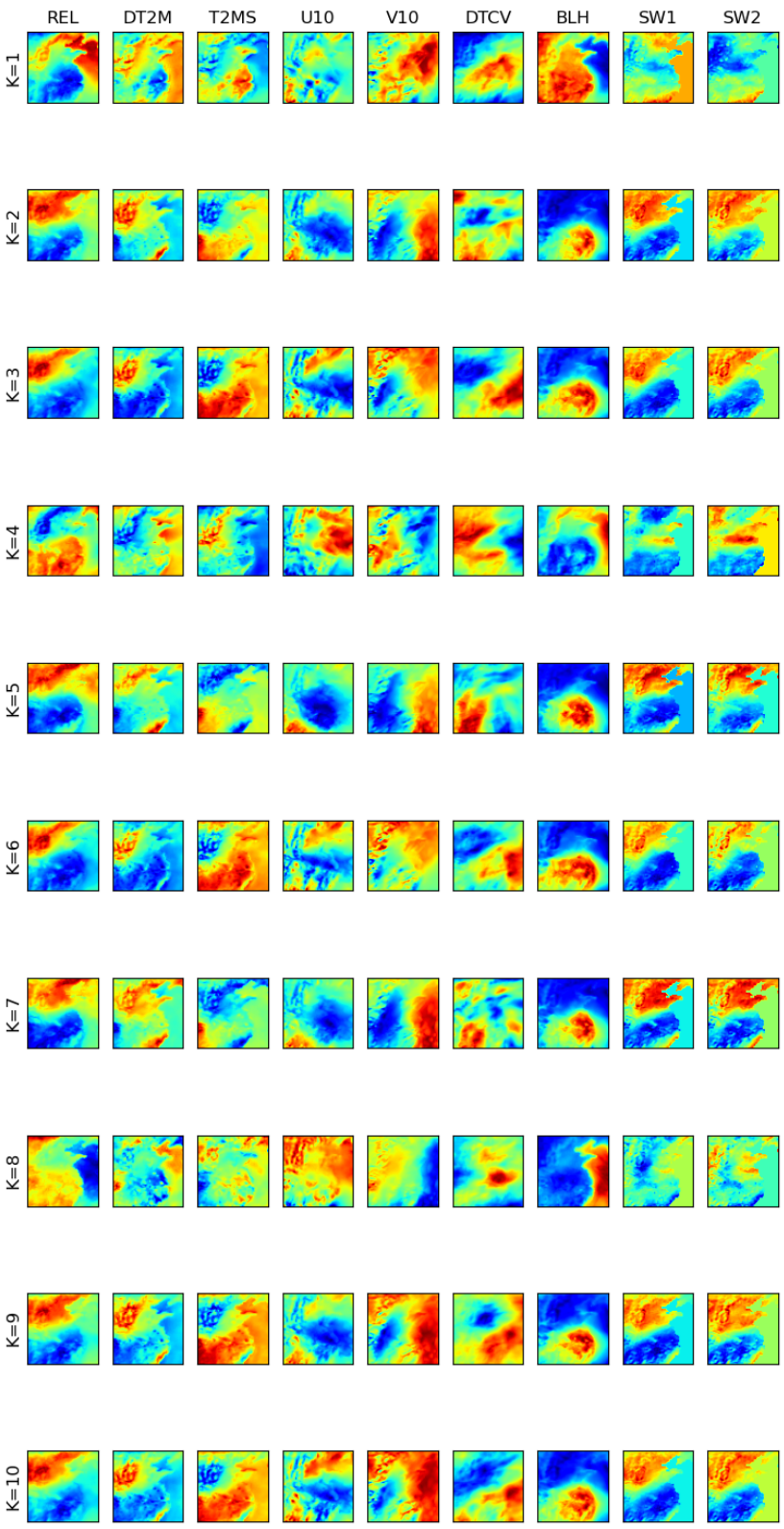

Figure S6. Cluster-mean feature maps in normalized format of 10 TN outcome clusters for Shanghai cases.

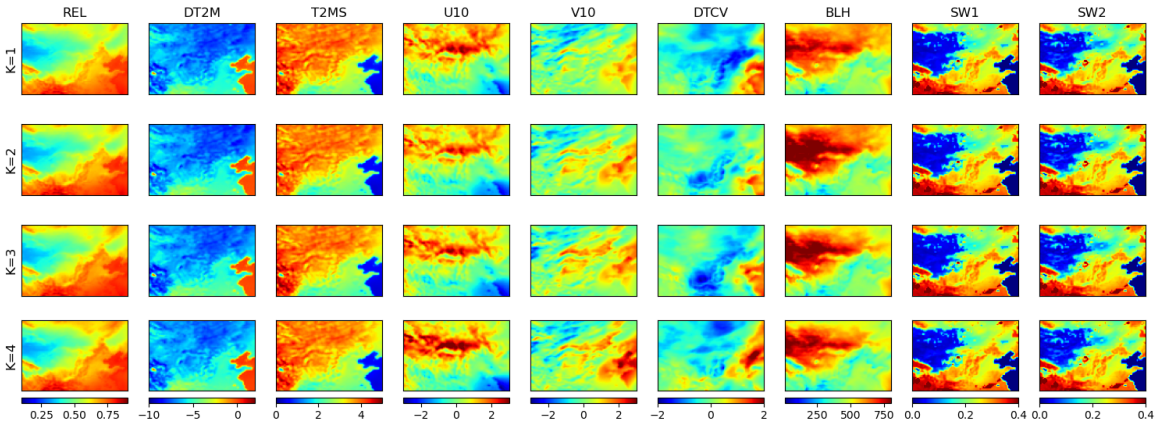

Figure S7. Cluster-mean feature maps in unnormalized format of 4 FP clusters for Beijing cases.

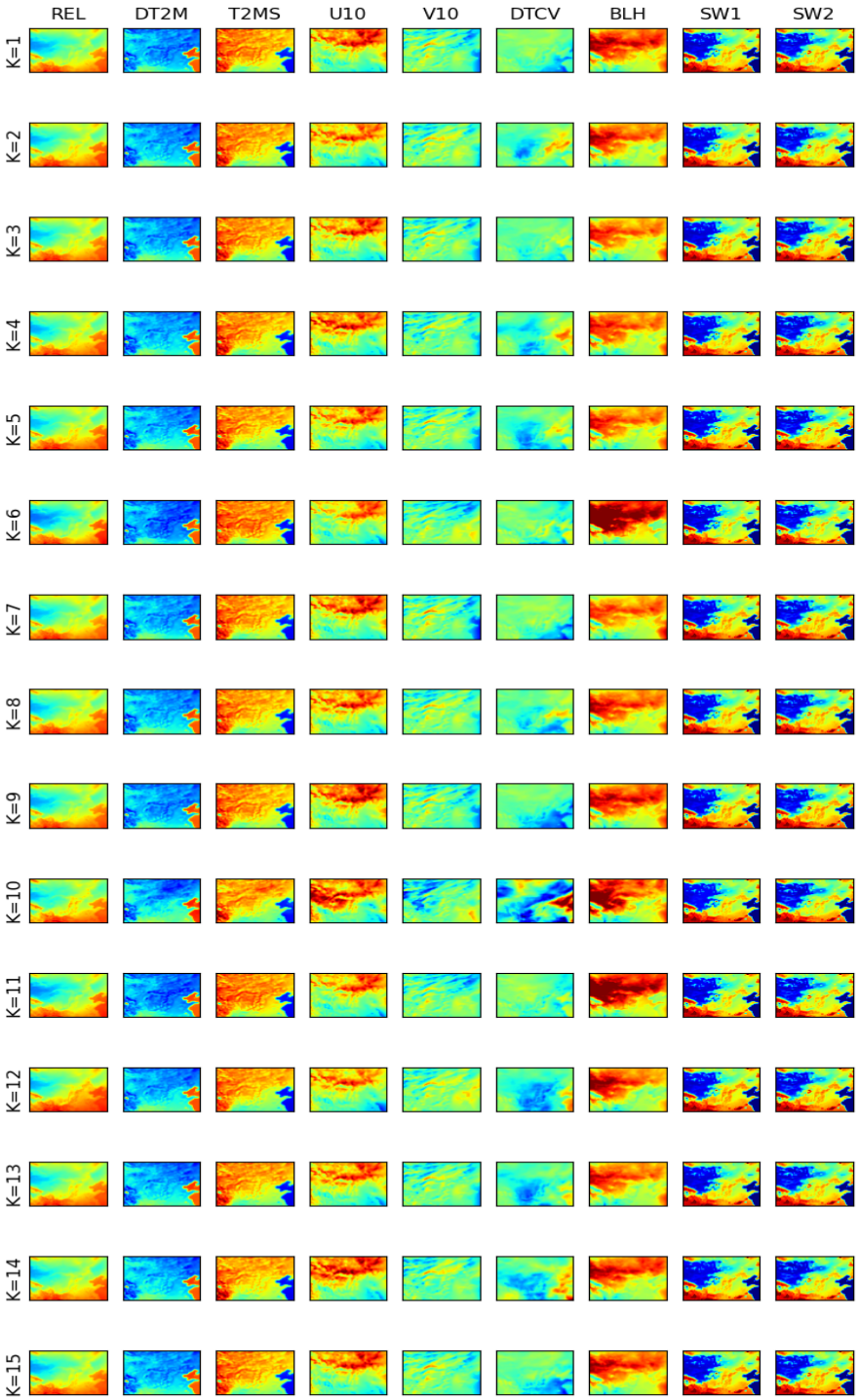

Figure S8. Cluster-mean feature maps in unnormalized format of 15 TN clusters for Beijing cases.