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Supplement of

CLIMK–WINDS: a new database of extreme European winter windstorms

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Supplement

Please see the further supplementary file Top50Storms_All_Summary.csv for a full list of all Top50 storms identified from each of the four input data sets, and if they were found in the XWS and C3S databases. As in the main text, the Top50 windstorms are listed with their names, dates of occurrence, and ordinal rank (rank 1 = most extreme storm, rank 50 = least extreme storm). A storm name in parentheses indicates that the same storm had two different names, while a hyphenated name 5 indicates that two individual storms could not be separated from each other within the database and are treated as a single storm. For storms lacking given names and thus named after their date of occurrence, the ERA5 date was preferred.
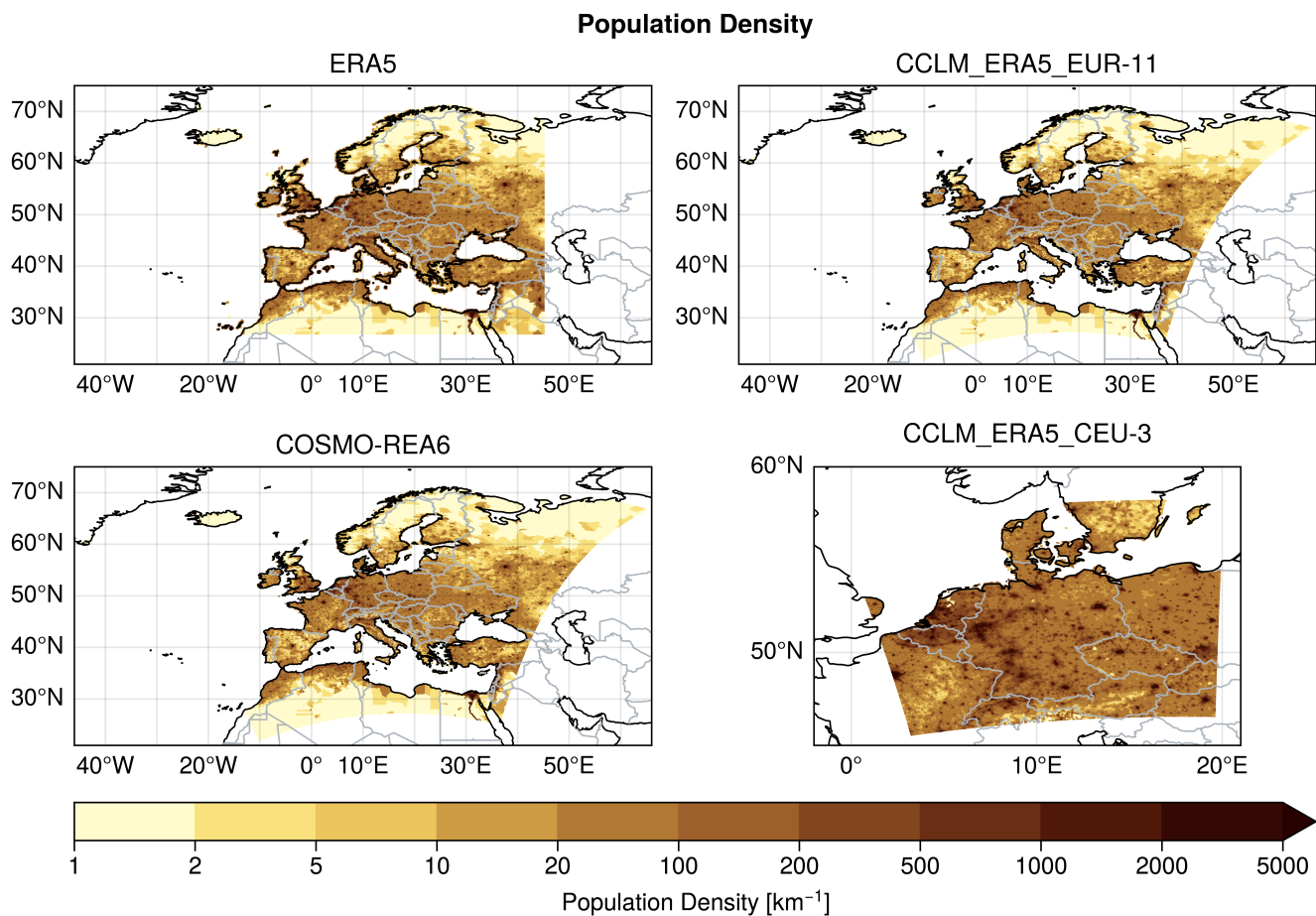
Population Density

Figure S1. Population density after regridding the Gridded Population of the World, version 4 (GPWv4) population density data set for the year 2020 (CIESIN, 2018) to the resolutions of the four input data sets: ERA5, CCLM_ERA5_EUR-11, COSMO-REA6, and CCLM_ERA5_CEU-3. For more details the reader is referred to Section 2.3 in the main article.

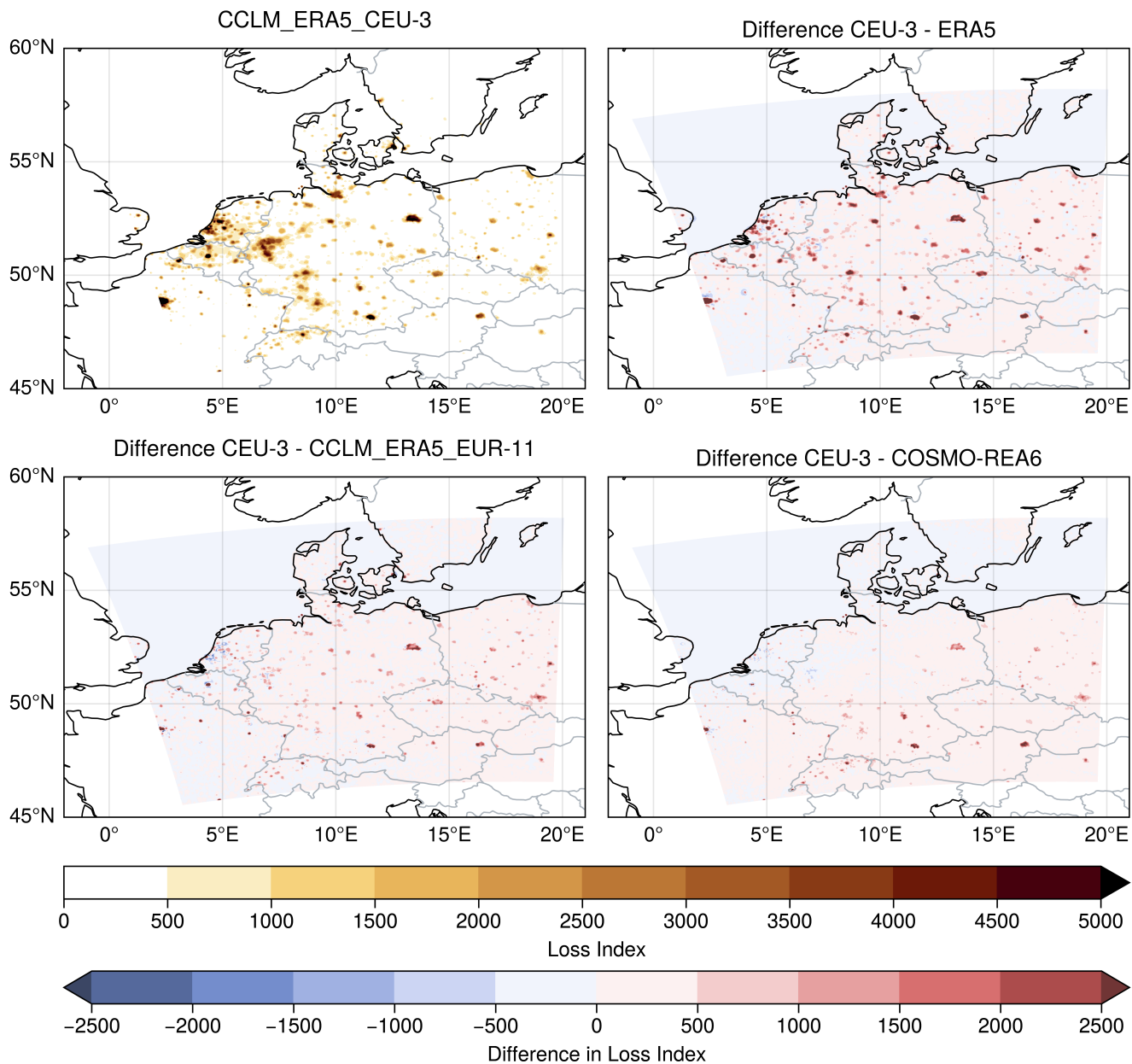# Common Storm Footprint Loss Index

Figure S2. Mean storm footprint Loss Index, computed over the common storms for CCLM_ERA5_CEU-3 (shading, top left). Shading in the other sub-panels shows the difference in common storm footprint loss index between CCLM_ERA5_CEU-3 and, in clockwise order, ERA5, COSMO-REA6, and CCLM_ERA5_EUR-11. For more details the reader is referred to Section 2.3 in the main article.
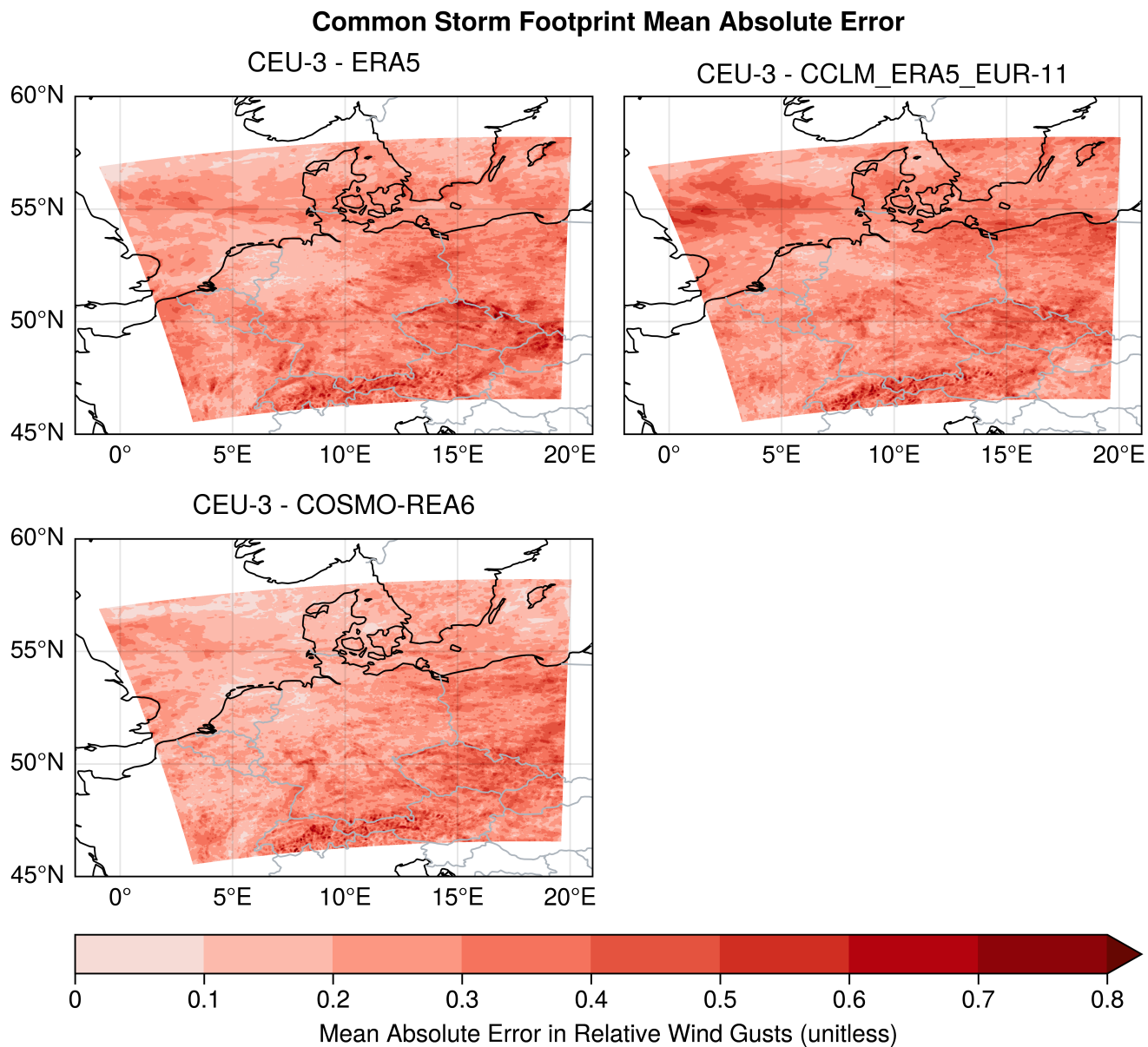
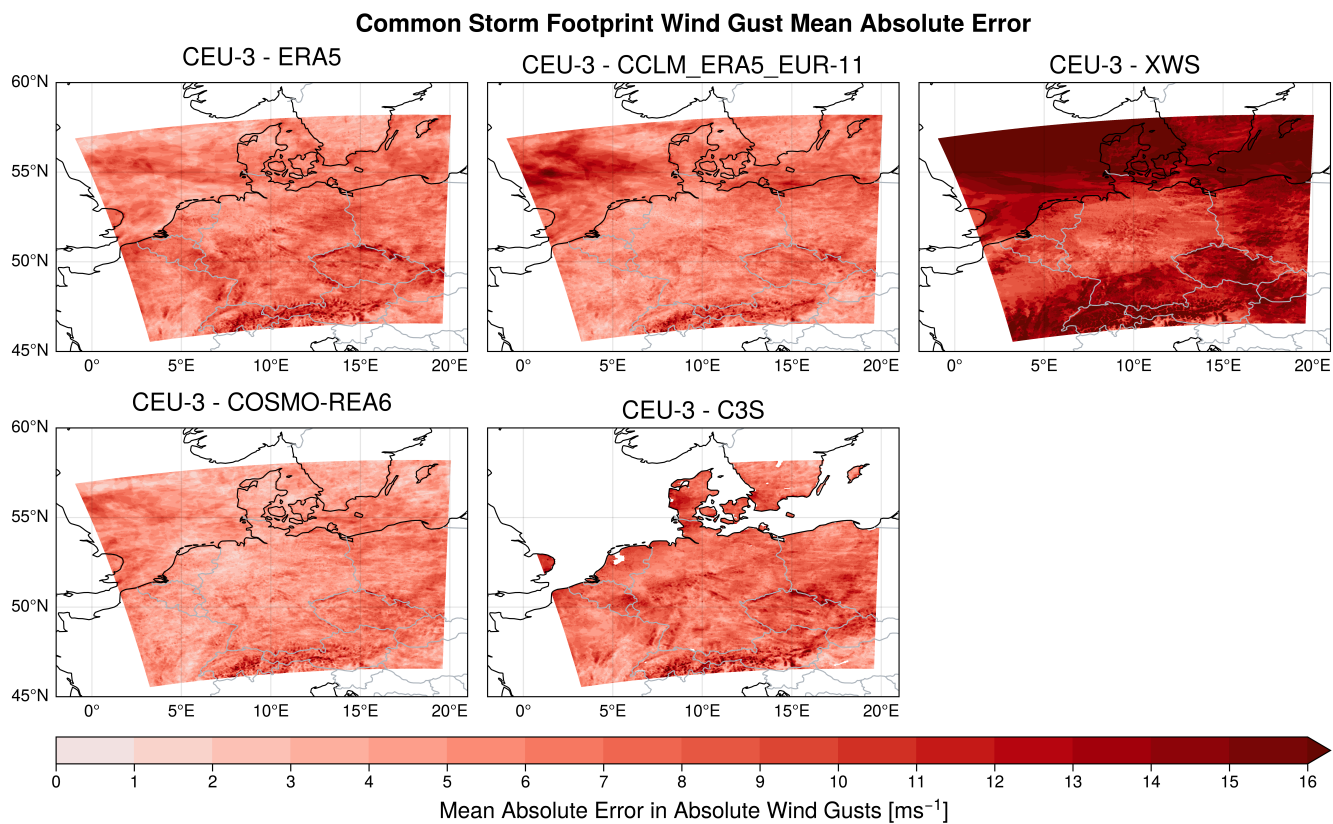**Figure S3.** As Figure 8 in the main article but for mean absolute error of relative wind gusts (unitless).

Figure S4. As Figure 9 in the main article but for mean absolute error of daily maximum wind gusts (m s^{-1}).

References

CIESIN: Gridded Population of the World, Version 4 (GPWv4): Population Density, Revision 11, Palisades, New York: NASA Socioeco-
nomic Data and Applications Center (SEDAC), https://doi.org/10.7927/H49C6VHW, 2018.