



Stratified verification of winter windstorms

J. Grieger, I. Höschel, and U. Ulbrich

Freie Universität Berlin, Institut für Meteorologie, Berlin, Germany (jens.grieger@met.fu-berlin.de)

Winter windstorms are the most loss-relevant natural hazard for the European region and thus are extreme meteorological events of huge socio-economic relevance. This study investigates decadal forecast skill of Northern-Hemisphere (NH) windstorms for initialized decadal hindcasts simulated with the MPI-ESM in the framework of MiKlip (Germany's initiative for decadal prediction). Identification and tracking of storms are done by means of an objective algorithm detecting the exceedance of the 98th percentile of near surface wind speed. The frequency of storm events per winter season is evaluated for reanalysis products, uninitialized historical projections and decadal hindcasts to assess the added value of the initialization for winter storm predictions. The decadal hindcasts outperform the uninitialized simulations in parts of the North Atlantic and European region. Forecast skill is additionally investigated in dependency of the Atlantic Multidecadal Variability (AMV). Stratifying verification along an AMV index shows that the main contribution to positive hindcast skill comes from the cold AMV phase (1973-1996), especially for the Eastern North Atlantic. It is discussed whether processes of storm development are differently represented in reanalysis and the MPI-ESM with respect to the AMV phases.