Burkart, K. and A.-M. Wyss (2017) The “Great Appalachian Storm” of 1950 in Reanalyses and Historical Weather Charts. In: Brönnimann, S. (Ed.) *Historical Weather Extremes in Reanalyses.* Geographica Bernensia G92, p. 47-58, DOI: 10.4480/GB2017.G92.04

Abstract

On the Thanksgiving weekend of 24-27 November 1950, the eastern United States were struck by one of the most damaging and meteorologically unique winter storms ever recorded. Forming over North Carolina, the storm quickly moved north, striking western Pennsylvania, eastern Ohio and West Virginia. These areas were covered with several feet of snow for multiple days. An accompanying windstorm covered a far greater area. The storm was unique, mainly, because it featured not only extremely strong winds and heavy snow, but also included both high and low temperatures. The focus of this paper lays on an analysis to establish whether the 20CRv2c, ERA-20C, NCEP/NCAR and CERA-20C reanalyses are able to reproduce the historical measurements and weather charts with respect to pressure, wind speed, 500 hPa geopotential height, and precipitation rate. The results show that 20CRv2c, ERA-20C, NCEP/NCAR and CERA-20C are able to reproduce all important large-scale characteristics of the “Great Appalachian Storm”. The comparison between the four datasets shows that the reanalysis datasets ERA-20C and CERA-20C, which have a higher spatial resolution, are able to represent more detailed features than 20CRv2c and NCEP/NCAR reanalysis.