



Abstract

The “Great White Storm” of 1913 was one of the strongest storms to hit the Great Lakes region, and likely one of the most devastating natural disasters in the whole of the United States. The intensity of the storm led to many deaths and important economic damage. The recent development of reanalysis data sets such as version 2c of the “Twentieth Century Reanalysis” (20CRv2c) and the ECMWF reanalyses ERA-20C and CERA-20C provide valuable information to analyse extreme events such as the “Great White Storm” of 1913. It can be used to study the atmospheric mechanisms leading to such intense storms, which might contribute to better assess similar weather events in the future. The “Great White Storm” of 1913 is well reproduced in 20CRv2c. The reanalysis captures the key ingredient responsible for the development of the storm. However, it fails to give a good estimate of smaller scale parameters such as snow depth. Further analyses are required concerning precipitation, as prolonged snowfall was one of the major problems for people during the storm. Although it appears that 20CRv2c better captures the storm than ERA-20C, such conclusions depend critically on the variables studied.