

prefers standard format

A Retrospective Look at the Great Armistice Day Storm of 1940: Using Numerical Modeling to Simulate Conditions on the Great Lakes during this Fateful Storm

Michael Dutter
NOAA/National Weather Service
Marquette, MI

From November 09-11, 1940, a significant and long-lasting autumn storm affected much of the Upper Midwest and Great Lakes region. While a fierce early-season blizzard raged across the Upper Midwest on the cold side of the storm, hurricane-force wind gusts and waves of more than 7 m ravaged the Great Lakes. On the Great Lakes alone, 69 lives were lost when 10 ships foundered, mostly on Lake Michigan. This storm will be long remembered as one of the more significant storms to affect the Great Lakes region, especially due to the significant number of lives and ships lost. To commemorate the 75th anniversary of this storm, an Advanced Research Weather Research and Forecasting (WRF-ARW) model (Skamarock et al. 2008) numerical simulation using the 20th Century Reanalysis (Compo et al. 2011) as initial and boundary conditions will be shown, detailing hour-by-hour wind and weather conditions during the height of the storm on the Great Lakes. Highly detailed 1-km output will suggest the weather conditions near the time each ship foundered. Lastly, using the WRF-ARW simulation data as the main meteorological input into the WaveWatch III model (Tolman 2002), we will show simulated wave heights for the Great Lakes for the duration of the storm.