# ProbSevere: Upgrades and Adaptation to Offshore Thunderstorms

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This project addresses NOAA's Weather Ready Nation and Integrated Environmental Modeling research and development objectives. More specifically, the research will help improve the accuracy and lead time of severe thunderstorm warnings, tornado warnings, and offshore convective weather statements.

- **Goal 1: Improve overall prediction of severe weather (ProbSevere) and prediction of tornadoes (ProbTor)**
  - **Limit impacts of NEXRAD beam blockage**
  - **Develop ProbSevere and ProbTor time series tool for AWIPS II**
  - **Assess how ProbSevere/ProbTor complement predictions from high resolution dynamic models such as the HRRR**
- **Goal 2: Develop version of ProbSevere for forecasting offshore convection that produces gale force winds – a major hazard to mariners**
  - **Build a database of gale and non-gale producing storms**
  - **Select predictors from NWP and GOES-16 (ABI and GLM)**
  - **Utilize predictors and storm database to make probabilistic, storm centric, forecasts of gale force winds and validate**
  - **End user evaluation**
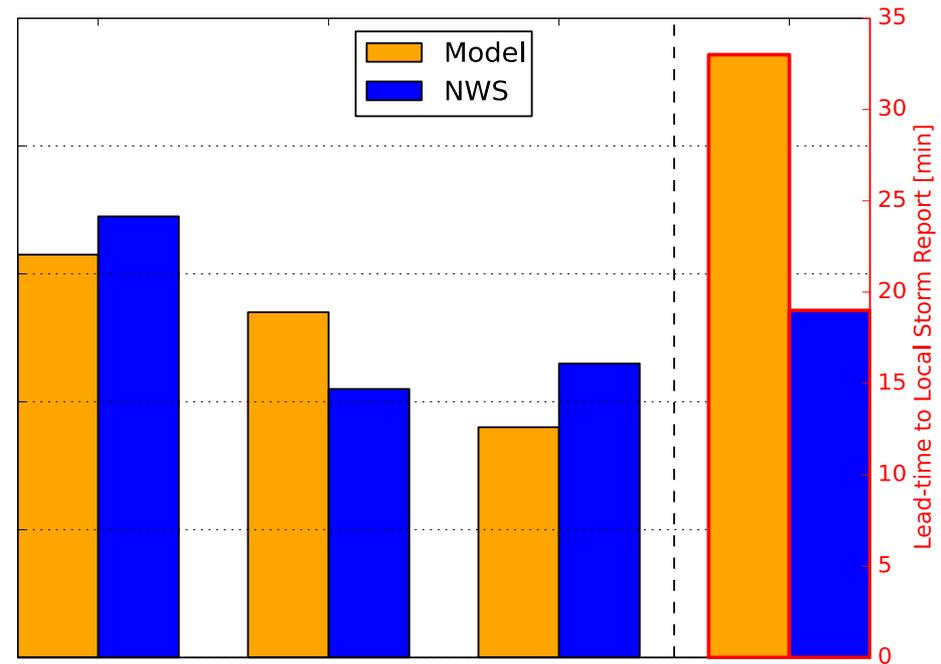
The probability of detection (POD), false alarm rate (FAR), and critical success index (CSI) of ProbSevere (orange) and official NWS severe weather warnings (blue) are shown relative to the y-axis on the left. The bars on the right show the median lead-time to the first report of severe weather (y-axis on the left). ProbSevere, while less skillful than NWS warnings, adds 14 minutes of lead-time.