



Experimental nowcasting and short-range forecasting of severe storms at the ESSL Testbed

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From 4 June to 6 July 2012, the first ESSL Testbed has taken place at the Research and Training Centre of the European Severe Storms Laboratory in Wiener Neustadt, Austria. During this time, researchers and forecasters worked closely together putting new forecast supporting products to the test.

The Testbed's main activity is to prepare experimental forecasts for severe weather, of which short-range forecasts and nowcasts for the following 2 hours form an important part. These nowcasts are made using new tools based on NWP, radar and satellite, as well as surface and upper-air observations. Subsequently, a verification of the forecasts is performed using the European Severe Weather Database, followed by an evaluation of forecasting tools and techniques.

Inspired by the annual Spring Program at NOAA's Hazardous Weather Testbed (HWT), the ESSL Testbed has a stronger focus on forecaster training than the HWT. Given the various backgrounds of the participants, an important Testbed goal is to acquaint its participants with severe weather forecasting methods and techniques that work universally. Among the tools that were evaluated at the 2012 Testbed were visualizations of high-resolution ensemble NWP (DWD's COSMO-DE-EPS), satellite-based cloud top cooling and overshooting top detection algorithms, lightning detection, and satellite and radar-based cell-tracking algorithms (DLR's Cb-TRAM and RadTRAM, and DWD's NowcastMix).

In daily "Expert Lectures", that were broadcast online to remote participants, researchers provided background information on their products and internationally renowned experts in forecasting presented their viewpoints on storm forecasting and its scientific roots.

Organized by ESSL in close cooperation with the Austrian Central Institute for Meteorology and Geodynamics (ZAMG), the Testbed was supported - among others - by the German Weather Service (DWD), EUMETSAT, WMO, ECMWF, VAISALA, and the GOES-R programme, providing products for evaluation and real-time meteorological data or financial support to participants. The first edition of the European Severe Storms Laboratory's Testbed has brought together 67 forecasters and developers from 21 countries across the world, a majority of whom were associated with the European National (Hydro-) Meteorological Services.

We will report on the first edition of the ESSL Testbed, present the forecasting, verification and evaluation activities using an example case, discuss its outcomes, and present plans for the 2013 Testbed.