

Development of Severe Weather Tool with GNSS Tropospheric Products in Bulgaria

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Abstract. Operational forecasting of formation and development of vigorous thunderstorms producing heavy rain and hail is currently done using radar images, surface and satellite observations in combination with Numerical Weather Prediction model. However, the challenge remains to resolve the high temporal and spatial variability of severe weather events and additional information like water vapour derived from GNSS tropospheric products has a potential to be a valuable operational tool.

The goal of this study is use the synergies between the NWP WRF, radar data and GNSS severe weather products (2D water vapour maps and time series) to develop prototype tool for nowcasting in Bulgaria.