

INVESTIGATION OF THE ACCURACY OF EXTREME PRECIPITATION FORECASTING USING DIFFERENT ECMWF MODEL PARAMETERS

Tijana Radović and Nevena Živanović
 tijana.radovic@hidmet.gov.rs
 nevena.zivanovic@hidmet.gov.rs
 Republic Hydrometeorological Service of Serbia
 Kneza Visaslava 66, Belgrade

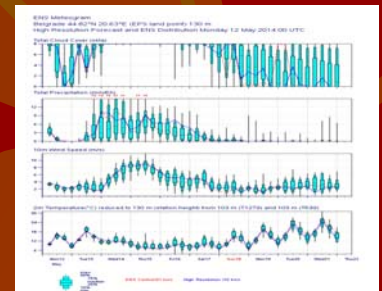
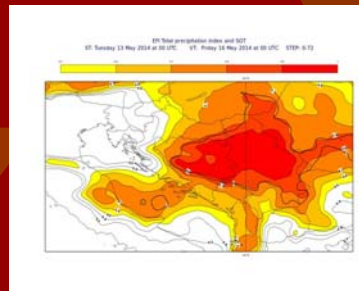
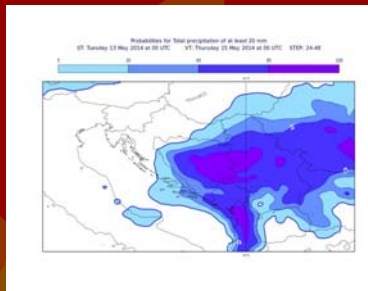
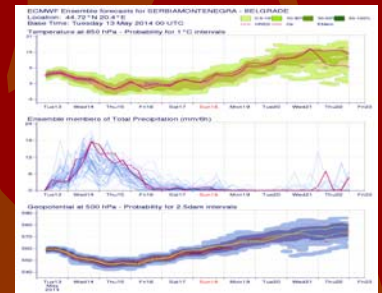
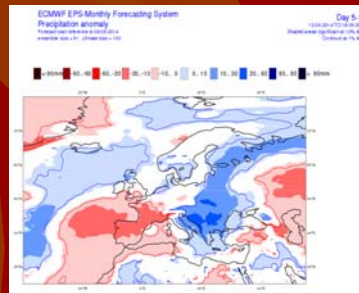
Introduction

In the period 13th to 16th of May 2014 heavy precipitation caused massive flooding all over the central Balkans, which led to human casualties and a lot of material damage. During this period Balkan peninsula was under the influence of a deep low formed over the Adriatic sea. The low moved slowly to the north-east towards the Carpathians and after a while moved back to the west. The amount of precipitation it produced broke a lot of historical records.



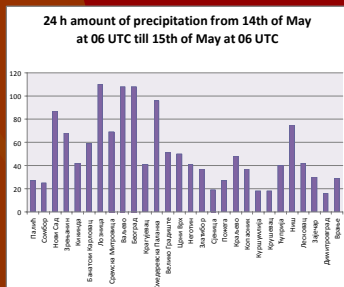
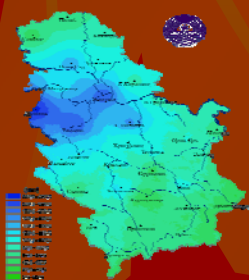
Methods

RHMSS issued warnings well in advance (first one issued on 10th of May and updated regularly till the rain ceased). Precipitation forecasts were based on various numerical models among which ECMWF model had been among the first ones to rely on. Besides basic products of deterministic model, the parameters used were: EFI (precipitation, global EFI multiple parameters, EFI distribution), ENS meteograms, SPI.



Observation

Total amount of rain from 12th to 18th of May 2014



Conclusion

The ECMWF model did predict an extreme precipitation event. Probability forecasts suggested amounts above normal. The amount of rain predicted by deterministic forecasts, as well as ensemble means was quite underforecasted. Considering all the information from the ECMWF model, it was possible to predict high probability for an extreme precipitation event as well as regions with highest amounts of rain. The greatest challenge was forecasting intervals of rain amounts as precisely as possible, which in our opinion, remains one of the biggest fields in which the forecasts should improve.