



## **Hydrodynamical Statistical Model to Forecast of Dangerous Precipitation over the Territory of Central and Eastern Europe**

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This report presents the results of application of a short-term (up to 12-24-36-48 hours) hydrodynamic-statistical model of forecast of dangerous precipitation in different seasons in Central and Eastern Europe. The statistical model was used the output hydrodynamic forecasts of the hemispherical and regional models of the Hydrometeorological Center of Russia. The statistical decisive rules for diagnosis and prognosis of dangerous precipitation for the warm and cold seasons were calculated separately using the data samples of objective analysis in accordance with the data on precipitation in the Central and Eastern Europe. The problem of choose of informative vector-predictor was decided by the method of diagonalization of correlation matrix and choosing of factors from blocks of connection predictors. The probabilities of two grades of precipitation, connected with discriminant function, are calculated in the nodes of grid of 150x150km, covering the territory of Central and Eastern Europe. The operative assessments of this forecast are very high (criterion  $T=0,6-0,8$ ).

The conditional probability of floods and landslides is also calculated automatically in the nodes of the grid according to the duration and the intensity of forecasted dangerous precipitation of different grades. We calculate also the function of the risk and the value of the damage.

The paper presents the examples of the forecasts of the floods and landslides at the territory of Balkan, Northern Italy, Central and Southern Europe.