



Retention Area Consideration At Hydrological Modelling

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For retention area we considered area of Ljubljanska and Celjska kotlina. We got the maximum values of PMF from scenario, where firstly, 30% max. Summer rainfall PMP is considered followed by 3 dry days and finally 100% max. Summer PMP. This PMF value we considered in further analysis of PMF calculation with retention areas.

First of all we calculated PMF at which comes to flooding of Ljubljanska kotlina. Further more we calculated volume of retention areas of Ljubljanska kotlina. Results show that subbasin Sava 1 (Ljubljanska kotlina) can retain 164 mio m³ of water. Filling up this volume takes about 9 hours. We calculated the filling of retention volume of Celjska kotlina for flow 1200 (calculated on basis of flood) and 4500 m³/s. Calculated volume of retention area of Celjska kotlina is at $Q=4509$ m³/s 74 mio. m³.

With adaptation of parameters of wave travel we retained part of the wave in flood area.

In case of flooding of Ljubljanska kotlina is the peak flow 8279 m³/s on subbasin Sava 3. On subbasin Sava 3 the peak flow without flooding in Ljubljanska kotlina was 11776 m³/s, which means, the peak flow is lower for about 3500 m³/s at Krško. On subbasin Savinja izliv the peak flow has dropped from 5090 m³/s to 3904 m³/s, which means, it is lower for about 1200 m³/s.

The calculated PMF is because of flooding of retention areas of Ljubljanska and Celjska kotlina lower for 4695 m³/s – it dropped from 11776 m³/s to 7081 m³/s.

We considered that 70 % of flood area is activated at maximum water level of output hydrograph. The result was lower flood wave peak and also certain time delay. Final result of PMF is flood discharge with maximum flow of 7080 m³/s on profile of NEK.