

Respond on the REVIEW I

1. The results are partly sufficient to support the interpretations and the conclusions. Time of concentration should be included in analyses of the extremely complex Bosna River tributaries network. It will be very useful if these data will be added in last column of Table 6. *Time of concentration presented in the text, there was no sufficient data for table 6.*
2. The number and quality of the references could be extended. *We add one; others are in the Slovene or Bosnian language.*
3. *Other remarks are accepted in the text*

Respond on the REVIEW II

1. accepted
2. Precipitation that was registered in May 2014, during the rains of 2-5 days, belongs to the category of extreme rains. It is not clear how they were treated when determining their return period? Are they tested for statistical exceptions? If yes, how is a probability distribution curve further calculated? The claim: a return period of 5000-10000 years, with no real evidence, is not acceptable! *The high values calculated for the Tuzla precipitation station situated in arid region near the Sava River main stream where the weather cyclone was situated. Data from previous years give quit low rainfall values. We did nota make additional statistical analysis. That should be subject of additional paper.*
3. Done
4. Chapter 4 is devoted to the flood of January 2010, but not for the flood in May 2014? This flood has been marked as important, but it is twice the small scale of the floods which occurred in May 2014 in the basin of the river Bosna. *Flood event from January 2010 is highest flood event with hourly discharge data. It is presented for illustration of the Bosna River flow regime.*
5. During determining of the probability of maximum annual discharge of the river Bosna at the hydrological station Dobož for the period 1961-2014 it is not clear:
 - a. How is determined the maximum discharge in May 2014 in the amount of 4121 m³/s, as well as the appropriate volume of the flood wave in the amount of 1,464 million m³, when it is stated that all hydrological stations downstream from Dobož were destroyed, and the fact that the town of Dobož was under water? *The discharges for WS Dobož estimates by observation during the flood, it was not measured*
 - b. The fact that the maximum discharge of the river Bosna near Dobož in May 2014 was about 45% greater than the following recorded maximum flow in May 1965 of 2,852 m³/s, while the volume increased around 85% (1464 million m³ compared to 789 million m³) indicates that the flood event of May 2014 have to be checked if it belongs to the category of "statistical exceptions" and after continue the process of it. This was not done in the work!? *The statistically (fig 9) values are on the 95 confidence limit and additional statistics was not develop.*
 - c. Table 7: data show that the return periods of the May floods in 2014 are estimated on the basis of the probability function calculated for the period before 2014 (data sources: ZV, FHMZ BiH, 2012). This is unacceptable! *Maybe but well illustrate the problem. The flood*

protection was developing on the data presented in the table 7 and suddenly 2014 event on the confidence limit happened (figure 9). Data on the table 7 was produce on the well done report of the hydrological service.

d. The state that the maximum discharge of Bosna at the confluence of the Sava River was higher than the measured discharge of the Sava on the bridge near Šamac (Croatian Hydrometeorological service on 17 May – 2 day after the Bosna River reached its maximum at Doboj) is or not underestimated? *The Croatian service measure $6000 \text{ m}^3 \text{ s}^{-1}$ and it was only flow below the bridge, not in flood plane. Due to levees overflow on Creation side upstream of the confluence, the discharge of the Bosna River was for sure higher than discharge of the Sava River upstream, but it is for additional research. The discharge values on figure 11 are quit lower than the Sava River discharge downstream.*

6. accept
7. It is not clear which type of time step data calculations is performed during the periods of calibration and validation of hydrological model. Application of model for the flood wave in May 2014 was carried out with daily time step data, which is quite a rough estimate, considering that the authoritative time of concentration in many decomposed sub-basins (basin delineation) is less than 24 hours. Fig. 7 indicates this by inflow and outflow hydrographs for the Lukavac reservoir on the river Spreča. *Available data for calibration and validation was on the daily time step basis. Hourly data was available only for the stations that survive the 2014 flood event.*
8. The hydrological model of the river Doboj should be made with hourly data time step, because the use of daily data loses clarity of the extremes. The hydrological model with such daily data showed that maximum flow rates of the river Bosna during the May floods of 2014 were higher compared to the data presented in Table 7 and the Fig 6. This indicates that my observation shown in item 5d has a real justification. *The model should be calibrated for the hourly time step, but we have not data available.*