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Interactive comment on "Exceptional floods in the Prut basin, Romania, in the context of heavy rains in the summer of 2010" *by* Gheorghe Romanescu and Cristian Constantin Stoleriu

Anonymous Referee #1

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General comment: The paper addresses a very interesting report about floods that occurred in 2010 in Romania. It is well documented with respect to water levels and discharges observed in the trans boundary Prut basin (nearly 27000 km^2). The paper might be considered as a reference document about largest floods in Europe. The described river system is complex because of existing dams, ponds and the particular geometry of river confluences. However the geometric data about the river system are not well described here.

Unfortunately, the paper organization is not easy to understand. The reader who is not used with this river system cannot follow the presentation. Detailed comments are as following. Line 34 "Floods are one of the most important natural hazards on Earth"

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references are about Europe and not the earth Line 36. “Significant funds...”. You may cite the date provided in Merz et al. http://www.nat-hazards-earth-syst-sci.net/nhess-special_issue77-preface.pdf The reference in lines 37 to 44 should be documented and separated in different topics. Effectively the list is too long and is a mixing of several subjects. For example: -Ahilan et al. 2012 is about statistical distribution of maximum annual discharge using GEV and relationships with basin geology - Alfieri et al. 2015 is about climate change impacts on floods - Berariu et al. 2015 is about the effects of disasters on infrastructures such as transportation infrastructures and their interdependence, etc... Line 61: are the Stanca-Costesti reservoir and the Prut reported in Fig. 1? Line 83 altitude in the catchment Line 90 Jijia basin area is not documented while this basin is important in the last part of the paper. Line 94 what is the criteria to define a “large pond”?. Line 111 “measurements were taken to estimate the discharge.” It is important to say which kind of measurements. Lines 113 to 118 Same remark as in lines 37 to 44. It should be clear what type of method is behind a given reference. For example Ali et al. (2012) used tracers while Delli-Priscoli and Stakhiv examined “the performance of existing flood protection systems”. Line 132 did CA, CI, CP have been defined before? Line 148, 149 the methodology should be more detailed. Line 154 and 164 are not compatible (1 July, 9 July). Line 168 You need to specify what is registered in each station. What do you mean by “only water levels”? the stations reported in Table 1 should be easily identified in Fig. 3 (by using a different marker) and what is observed (level or discharge should be mentioned. Fig. 5 is not easy to read Line 199 and line 203. What is meant by “floods were recorded”? Do you mean that a flood gauging was operated instead of using the rating curve? Line 211 the peculiarity of Oancea gauging station and Sivita station distinguishing tidal effects should be documented. Line 243 and elsewhere “Fig. 3 and 6” is not clear. Fig 6 is not easy to read. The peculiarity of Stefanesti(?) station should be mentioned and analyzed in the text. (lines 218 to 221) In all figures, with levels and discherges plts the basin area should be mentioned as well as in lines 310-315. Line 316. In is not clear why this mention here “The Oroftiana gauging station only records water level

measurements." Idem until line 321. What is the consequence on data accuracy? Line 317. Why this influence? Lines 329 – 330. Was rainfall observed? Line 331-341 should in the study area section Line 371; When did this record happened? Line 380. Is this increase a result from what was said before? Line 386 Table 2 should be in the study area section Line 412 the backwater phenomena are effectively very difficult to assess and to predict. Lines 427 to 432. The role of the reservoir and its location in comparison to the river stations is not well described in the text. Line 449 Fig.12 presents challenging issues for water management. Information lines 453 to 455 are of great importance and should be reported very early in the text corp.

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