

## ***Interactive comment on “Hydrometeorological Conditions Leading to the 2015 Salgar Flash Flood: Lessons for Vulnerable Regions in Tropical Complex Terrain” by Carlos D. Hoyos et al.***

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The paper presents an overview of the meteorological conditions that triggered the flash flood in Salgar (Colombia) in May 2015. The authors put together a lot of information using radar imagery, satellite retrievals, atmospheric modelling and trajectories. . . The combination of different sources allowed a comprehensive overview of the case study.

The presentation of methods and sources is clear and relevant. Figures are useful and relevant. Captions are detailed and full of required information to understand the figure. Two figures would require some modifications in my opinion : - Figure 1a is small

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and we are not able to locate the city of Salgar the main urban areas hit by the 18th may Flash floods in the frame of the catchment. - Figure 3 : rainfall amount usually are represented with bars instead of curves (curves are indeed reserved for cumulative precipitations - fig4f 4g , SST are not really visible. The presentation of results is also relevant showing that the floods results in a complex scenario associating previous huge rainfalls in the upstream basin and triggering rainfalls 3 days after although for this third episode, hourly precipitations was not so extreme. I suggest to replace hydrometeorological in the title by meteorological as there is no information in the paper on the hydrological characteristics. If authors want to keep the title “hydrometeorological “ in the title they should introduce information on hydrology e.g. in the discussion comparing the occurrence of peak discharge and the highest hourly precipitations;

Discussion and conclusion The discussion is rather a conclusion. Some comparison with other cases would be welcome. On another hand, it is relevant to consider not only the rainfall of the 18th of May but also the cumulative rainfalls of the previous days but (p.28) the 96-hours cumulative precipitation forecast is suggested to be the best period to assess the potential occurrence of flash floods but this conclusion is valid only for this case study. In another case, the relevant period could be 100 hours or 108 hours etc. flood risk managers in Salgar may have at their disposal a running cumulative amount of rainfall over the basin for any period and above all, an updated assessment of soil moisture over the basin. But that is matter of hydrologists. One of the weaknesses of the paper is the shortness of the reference period to estimate the return period of the 2015 rainfall event. To conclude that the flash flood is the more intense over the last five years is not really interesting. Authors account for the radar QPE record over the period 2014-2018. We suppose that they have not any other long series at their disposal. The discussion could introduce some qualitative testimonies about previous flash floods (last century?) that would allow putting the 2015 event in perspective.

typing mistakes : Line 241 : would not the temperature be 27°-29° instead of 37° -39° ?  
? Line 271 : It is important to note that the we use moisture may reach the atmospheric

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column over La Liboriana at different levels. l. 272 : reaching l. 493 : "specific" p. 30 caption of figure 19 : "topography" and "The color table for relative humidity corresponds to panels." l. 517 : suggests l. 528 : additionally

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