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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Intensity-Duration-Frequency (IDF) rainfall curves in Senegal" *by* Youssouph Sane et al.

A. Medard (Referee)

agbazo.medard_noukpo@courrier.uqam.ca

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First, I would like to congratulate the authors for choosing to work on this topic in one region of Africa. The paper focuses on the IDF curves; it is a societal topic of great importance for all countries of the world, but more specifically for those in Africa where the construction of road infrastructure, the forecast of floods and drought occupy much of their government's agenda. This article is well written and structured, and above all was carried out over long time series of rains that they treated well by a solid method. The Figures are clear and allow deducing the results. However, I have a very important question that is related to the methodology: I would like to ask the authors to explain the reasons for choosing the time scale interval from 1h to 24h only when they have a long database of durations D ranging from 5 minutes to 24 hours (5, 10, 15, 30, 60,

90, 120, 180, 240 min and 24 hours). I am not aware of the preliminary studies on the determination of scale invariance regimes in the rainfall time series in Senegal. Based for example on the work of (Ghanmi, 2015) for Tunisia and those of (Agbazo et al., 2016) for Benin, we know that from 5 minutes to 24 hours, there can be two regimes of invariance of scale and 1hour to 24 hours do not necessarily have one.

Thus, I would recommend to the authors if this is possible to make a study on the temporal regimes of scale invariance of their series to make sure that 1h to 24 hours is indeed a regime of scale invariance for Senegal. This would make the study more robust and complete.

I highly recommend the publication of this article.

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