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Interactive comment on "Monitoring ephemeral, intermittent and perennial streamflow: A data set from 182 sites in the Attert catchment, Luxembourg" *by* Nils H. Kaplan et al.

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Dear Referee,

Thank you for your helpful comments and questions to our manuscript. Please find your questions and comments marked as e.g. « R3.C1: question/comment» followed by our answer marked as e.g. R3.A1: below.

Best regards, Kaplan et al.

Specific comments:

« R3.C1: The introduction can be shortened and more focused on the methods used

for this dataset. »

R3.A1: Thank you for your comment on the length of the introduction. We will check for potential parts of the text that can be shortened. The introduction is structured into a short introduction to the classification of ephemeral, intermittent and perennial streams in either statistical or physical based classification methods, followed by a short overview of potential methods that are used to observe streamflow. We put a little more emphasis on the statistical classification methods because we apply them for the data descriptions in the data section. Still, we see a potential to shorten the section of statistical based classification methods. For us it is important to show that methods for streamflow monitoring developed over time and recently a variety of methods evolved from many different studies which all have benefits and drawbacks in their specific way. With our choice of methods and the existing dataset we show that this combined setup of sensors is a functioning, yet not perfect setup for the continuous streamflow observation but the introduction should also offer space for those methods that are also available and might be considered when setting up a similar experiment in the future. Therefore, we prefer to keep this section but will shorten it if the editor agrees with the reviewer on this point.

« R3.C2: Bedrock, land use, climate and topography are well described. However a sentence explaining the surface soils would be useful to list under site description. »

R3.A2: We agree and will add information about the surface soils in the site description.

« R3.C3: The shapefile that contains the spatial data there are different attributes summarized within catchments. In order for someone else to work with this data it's important to have access to these catchments. I suggest that a description of how these catchments were extracted is included. Perhaps even upload the catchments along with the streamflow data. »

R3.A3: We refer here to our reply to the Anonymous Reviewer #2 (R2.A4). We used a DEM of 15m resolution in this study to calculate catchment size with the catch-

ment area recursive algorithm from the SAGA GIS toolbox. We will update the Data-Descripition.pdf file with a more detailed description of the extraction of GIS and will supply the shape files of the catchments.

« R3.C4: I'm not clear on how exact the locations of the points are. Any estimate of GPS accuracy would help future users when delineating catchments or conducting hydrological modeling. »

R3.A4: We used hand held GPS devices to identify the locations. Spatial accuracy of the device was sometimes at 8-10m, especially in the deep inclined valleys of the Ardennes and Luxembourg Sandstone, but generally between 3 and 4 m. We used a digital topographic map (1:20.000) to correct locations in the shape file if needed. This information will be added to the specific sections in the paper.

Technical corrections:

« R3.C5: Minor comments on figure 1: North arrows are only required if the map is not northoriented. It can be removed to clean up the look of figure 1. »

R3.A5: We agree that clean looking figures improve every publication. However, the detail of including a North arrow in a map/figure is discussed in the scientific community but will never be debated in a cartography class. Prof. Dr. David Schultz (http://eloquentscience.com/2010/02/when-to-use-north-arrows-on-maps/) presents some examples, where an added North arrow not only helps to identify the orientation of the map but could also help to identify erroneous data. He states: "The addition of a north arrow can never harm a figure, only help with clarity". Some journals advise to include a North arrow in figures (e.g.: https://onlinelibrary.wiley.com/page/journal/20544049/homepage/forauthors.html), whereas ESSD and HESS leaves the decision open to the authors and editors as clear guidelines are missing. In this case we would prefer to follow the recommendation of Prof. Schultz and keep the North arrow.

« R3.C6: Figure 4 and 5: in the figure legend dates are written 'year-month-day" but in the text it's written "day-month-year". Is this intentional? »

R3.A6: We will change the date in the figure to the ESSD standard dd.mm.yyyy.

« R3.C7: Figure 6 description, bottom line: check spelling of "smaler". Should probably be "Smaller". Figure 6: The labels for proportion of sandstone is written horizontally while the labels for marls and slate are tilted. I suggest that you display all labels horizontally. Otherwise a neat figure. »

R3.A7: We will change the spelling to the correct "smaller". The labels in Figure 6 are intentionally tilted and non tilted according to the dashed lines which delineate the percentages in the plot. We used the ggtern library in R to generate the plot.