Interactive comment on "The African Database of Hydrometric Indices (ADHI)" *by* Yves Tramblay et al.

Hong Do (Referee)

hongdo@umich.edu

This manuscript introduces the African Database of Hydrometric Indices (ADHI), an unprecedented collection of streamflow signatures for Africa. I believe the data product will be greatly appreciated by the regional and global hydrology communities (myself included) as it can potentially fill a significant gap in in-situ records of streamflow and thus can advance hydrologic research over the tropics.

Although I fully support the publication of this dataset, I have the feeling that the dataset (and associated manuscript) has been developed in a rush, and thus has missed an opportunity to become a great product that benefits a broader range of users. For example, only time series of annual mean, annual max, and annual 7-d min streamflow

indices are published although the authors have done an excellent job in synthesizing and quality-controlling that much daily streamflow data.

I'm recommending a major revision to encourage the authors to improve and make the dataset more attractive to the international community. Below, I listed three major improvements that I strongly suggest the authors consider.

1. Expand the streamflow indices that could be accessed publicly.

- I appreciate the challenges in data restriction that the authors could have faced, but I think that it is defensible to increase the number of published time-series indices from three (in the current phase) to that described in Gudmundsson et al. (2018) - which I believe the authors have mentioned in their manuscript.

- I do think that at the minimum, time series of monthly indices (mean, max, min) would be highly appreciated by the global community to support a wide range of hydro-climatological research.

- I feel that the static percentiles that currently published in the summary text file could be re-processed using the block-window approach (e.g. yearly) to derive time-series that are useful to assess hydrological changes in Africa.

2. Providing catchment shapefiles

Figure 3 shows that the authors have also compiled/generated a great collection of catchment boundaries. This is another great asset that could benefit a broad range of end-users. I think publishing this information will not inflict any troubles regarding data policies.

3. Although I have not provided any specific comments on the manuscript (as I expect a major revision to make the manuscript become stronger), I have some general comments on the writing that may help better highlight the contribution of this dataset:

- The title: please consider some assertion titles such as "The production of seventy-

year long streamflow indices for 1500 stations across Africa." This type of title reflects better the usefulness of the AHDI and thus will be more attractive to prospective users.

- Some figures were not associated with an insightful discussion (Figure 1 is not exactly what described in Section 2.1; Figure 5 was completely left out in the discussion). Please expand your discussion regarding any "lesson-learned" working with this dataset. For instance, some discussion about the relationship between the annual precipitation (shown as the background of Figure 1) and annual streamflow (generated by the authors) could be useful; section 4 contains effectively only two lists of bullet points - but could be expanded to include examples of "spurious patterns", substantial local changes, or improvement relative to the GRDC (see below.)

- I also think a map showing improvement of ADHI relative to the GRDC database (perhaps in Section 4) could be useful for end-users. For instance, the authors can classify stations into three categories (i) new stations (relative to GRDC), (ii) extended record stations, and (iii) no improvement.

The efforts of the authors to publish this data are greatly commended, and I am very excited about the release of the updated AHDI.