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Interactive comment on "Observational gridded runoff estimates for Europe (E-RUN version 1.0)" *by* Lukas Gudmundsson and Sonia I. Seneviratne

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Presented for the review is the gridded runoff estimates dataset for Europe along with the paper describing the methodological concepts, initial data and resulting dataset quality assessment. Both the dataset and the paper under review clearly deserve overall positive rating. The paper and the dataset are suitable for publication with several minor revisions. The paper gives a good insight into the creation of the dataset, as well as the reference to an earlier paper by the authors (referred to in the text as GS15), providing the methodology in more detail. It can be clearly seen that a significant amount of work has been carried out, especially concerning the unification of several European runoff databases. One of the common disadvantages of the datasets employed, despite its significant scientific value and outstanding compilation effort, is the unevenness in data availability, is obviously clear from the map of the stations used

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for the study. This results in decreased station density in the eastern part of the dataset domain. However, this disadvantage can by all means not be attributed to the authors of the paper under review, as they made a further effort to homogenize and condition the initial data. The dataset is presented in common NetCDF format and can be easily downloaded directly from PANGAEA website via the provided link. The selected format is convenient for data handling, subsetting and visualization. Specific Comments: One of the major concerns in the data is its spatial extent. There are three arguable regions in the resulting grid, which are not directly discussed in the paper (see image supplement for this comment). In my opinion, the grid points located to the east of 60° longitude might be excluded from the dataset, as there are no underlying observations (see region marked "1"). The region marked "2" shows grid cells over the major part of the Caspian sea, hence it's unclear what their runoff values may be attributed to. It has also been noted that the figures provided in the paper miss Caspian Sea shoreline. Some of the cells in this region lack data for the period of 2005 – 2006 and 2010 – 2014. According to the other referees' comments this is an issue for several other regions as well. Map in Fig. 5 of the paper addresses this issue. The region marked "3" in the supplement image depicts northern Marocco, for which also no observations were available. Furthermore, the grid extent does not cover the territory of Iceland. Technical corrections: P10 L10: "validation is space" – "validation in space". Overall rating of the paper and the dataset is very positive; I greatly support the effort made by authors and will be looking forward to their research in the future.

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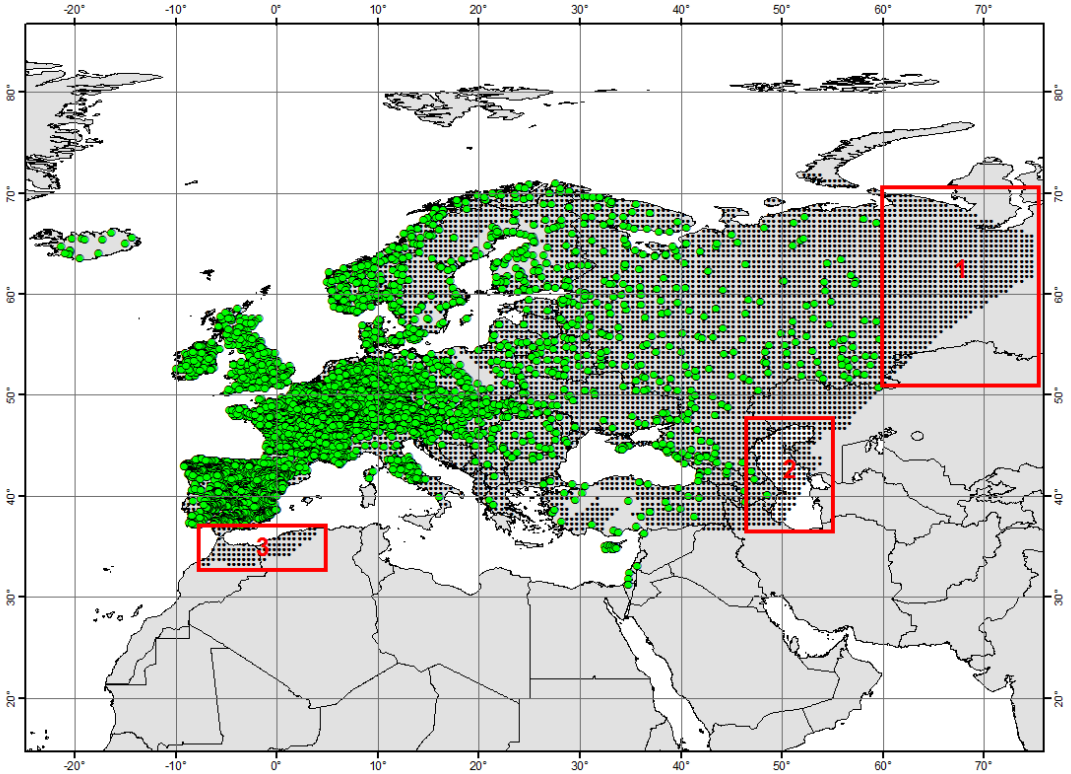

Fig. 1.

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