Interactive comment on "FROGs: a daily 1° × 1° gridded precipitation database ofrain gauge, satellite and reanalysis products" *by* Rémy Roca et al.

Anonymous Referee #2

Received and published: 1 May 2019

The purpose of this database is to provide easy access to an ensemble of precipitation datasets (in situ, satellite, reanalysis) that have been re-gridded at a daily 1x1 resolution. The FROGs database (FROGs stands for Frequent Rainfall Observations on GridS). The database includes 6 in-situ datasets, 22 satellite datasets (including 13 global satellite products, 3 land only products, 1 ocean only product, and 5 regional products), and 5 reanalysis products. The authors mention that this database will include additional products in the future. I believe this will be a useful portal. It will allow to access a variety of rainfall products with the same format, spatial and temporal resolutions. This will facilitates global (or local) analysis of precipitation over different period of records.

General comments

1. The fact that the authors include in the database different version of the same product (i.e. GPCC, 3B42, GSMAP, CMORPH, TAMSAT . . .) is in my opinion a very good thing. This will allow to compare the products within a same family. The impact of the different retrieval algorithms (i.e. MW vs. IR) or the bias-adjustment procedures (i.e. before/after gauge corrections) could be easily quantified.

2. I have some reservations regarding one of the mentioned use of the database. This application concerns the analyses of extreme events (mentioned on P4, L15-17 and at a couple of other occurrences in the text). The products being re-gridded on the same 1x1 degree grid (i.e. upscaled from their native resolution), there is a possibility that those extreme events will be "washed out" due to the re-gridding procedure (in particular with satellite products going from 0.25x0.25deg to 1x1deg). I wonder if the authors have tested the impact of the re-gridding procedure on precipitation extremes and if they have quantified those differences? In any case, a few words should be added to mention this.

3. At best, the extend of the period of record for the different datasets goes up to the year 2017 (and in one case 2018). Apart for the products that are discontinued, the authors mention the desire to update the database with the most recent year. I think that updating the database at frequent intervals (i.e. once a year) would be useful to the community.

Specific comments

4. P11 and Table 2: Move PERSIANN-CDR up the text to match order in Table 2 (before CMORPH).

5. P17 and Table 3: Move ERA-Interim down the text to match order in Table 3. Add the full product name in the Table.

6. For each Table (1,2,3), I would suggest adding either a column for the native res-

olution or at least a mark indicating which datasets have been re-gridded at 1x1 deg. resolution (i.e. the datasets that have been modified for the purpose of building this database.

7. Figure 1 is hard to read. This makes sense to try to have all the products in one Figure but I would suggest making each panel bigger (maybe 3 panels by row). The axis label (vertical/horizontal) should be added where needed. Also, it would be better to keep the same order for the products between the text, tables, and within Figure 1 (i.e. the order of the different panels). Additionally, a figure could be added that would include in the same panel a comparison of the datasets belonging to a same category (in-situ, satellite, reanalysis) and same domain (i.e. 50S-50N for instance) (i.e. CPC + GPCC + REGEN, all 3B42 and/or GSMAP, CMORPH, . . .). I don't think this would be too much of an effort and this would allow the reader to have a better visual sense of the differences between comparable products (family, domain, type).

8. References: A lot of references (I counted at least 35) are cited in the text but aren't found in the list of references. Vice-versa, a few references cited in the list don't seem to appear in the text.

C3