

Interactive comment on “Synthetic Weather Diaries: Concept and Application to Swiss Weather in 1816” by Stefan Brönnimann

Anonymous Referee #2

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In this very complete and carefully-prepared manuscript, author presented a novel methodology to translate numerical reconstructions into text describing daily weather, termed as "synthetic weather diary". The authors show that "synthetic weather diary" show a good agreement with independent non-instrumental daily weather observation, and monthly weather summaries. This subject is very important for interdisciplinary study between climatologists and historian. Development of global atmospheric reanalysis data back to the 19th century has progressed in recent years. Reviewer think "synthetic weather diary" can be applied as an intermediary between these reanalysis data and regional scale weather studies. Moreover, this methodology has high applicability to the other regions of the world like East Asia, where historical daily weather documents are abundant. Reviewer strongly recommend to accept this paper for Cli-

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mate of the Past after following minor revision.

Line 118 ,Page4 Autor claims that "St.Gall record contains instrumental(temperature, pressure) and non-instrumental(precipitation, sky cover)information". Usually, we use term of" precipitation" as a observed value by rain gauge in context of climatology. Therefore, it is better to make it clear the definition of the term "non-instrumental" in the present study. Readers not familiar with historical climatology tend to confuse "non-instrumental observation" with "weather dairy".

Figure 2, Author shows comparison between synthetic weather diary and observation. Upper panel of Figure 2 (Winterthur,1865)shows that synthetic weather diary captured more frequent rainfall events in July and August compared to observations. Reviewer would like to recommend to explain possible cause of this difference. In particular, reviewer would like to know whether this difference is typical feature for relatively dry year(1865).

Line 284-287,Page8 Author shows that the difference between relatively dry year(1865) and the wet year(1816) is extremely clear.

If possible, reviewer would like to see the condition for normal year.

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2020-74>, 2020.

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