

Interactive comment on “GPCC Drought Index – a new, combined, and gridded global drought index” by M. Ziese et al.

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Comment: The paper is missing a 'discussion of results' chapter. The presented index is not compared to existing indices nor to large recent drought events. As such currently only a method is proposed and results are computed, it is left to the reader to understand if the method is an improvement of existing available data. I recommend to add a discussion chapter in which the first results are compared to existing indices such as available in EDO, DMCSEE etc. Important is also whether the resolution of 1 dd and the time resolution of 1 month yields significant results. I would recommend to compare to the European Drought of 2003.

Answer: Thanks for your comment. We add a section called “Comparison of GPCC-

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DI with other SPI and SPEI data sets”, where a comparison between GPCC-DI, SPEI and the SPI from the European Drought Observatory is given for the months January, February and August 2003. So we put a comparison and case study into one section. We selected January, because there was more than normal precipitation in most regions of Europe. February was chosen, because it is a winter month with less than normal precipitation in many regions in Europe. A heat wave and less than normal precipitation occurred in August 2003, therefore we picked out this summer month. Overall, all three drought indices show the comparable behavior with differences due to different underlying data sets and reference periods.

The spatial resolution of 1° is related to the underlying precipitation data. Due to the low number of available stations in some regions a higher spatial resolution would sham information, which is not in the data set. Therefore, you lose local extremes due to the smoothing of the interpolation. If you increase the temporal resolution at a constant number of stations, you increase your interpolation error. To our knowledge, there are no gridded daily precipitation and temperature data sets with at least the same quality as the applied ones to provide index data for pentads etc. We add no additional text to the article regarding this discussion.

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