

EGU21-16383

<https://doi.org/10.5194/egusphere-egu21-16383>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Flash Drought identification – a comparison of definitions across different datasets.

Pedro Henrique Lima Alencar^{1,2}, José Carlos de Araújo², and Eva Nora Paton¹

¹Ecohydrology and Landscape Evaluation, Institute of Ecology, Technische Universität Berlin, Germany

²Agricultural Engineering, Agricultural Sciences, Universidade Federal do Ceará, Brazil

Flash droughts recently started to draw a larger curiosity to its occurrence and, therefore, its features. Differently from the slow development of droughts (months to years), flash droughts evolve over a short time (weeks) of a rapid intensification. Over the last few years, multiple methods for flash drought identification were proposed. Those methods, although sharing some characteristics, as tracking of soil water content and/or evapotranspiration (actual and potential), end up not flagging the same periods under flash drought events. We compared six well-known flash drought identification methods from the literature and used two different datasets. The datasets are: (1) the FluxNET15 dataset (Pastorello et al, 2020), a collection of worldwide, quality-controlled measurements of several hydroclimatic variables, such as soil water content, precipitation, temperature, and wind speed; and (2) the ECMWF Reanalysis 5 (ERA5 – Hersbach et al., 2019) provides over three hundred different data including soil water content in multiple levels, evapotranspiration, precipitation, and temperature. Ten stations from FluxNET15 were selected and the data from the ERA5 on the respective pixels was acquired. The aim of this work is to compare the event identification of different methods using different datasets as input (direct measures and reanalysis based).