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Interactive comment on "A high-resolution reanalysis of global fire weather from 1979 to 2018 – Overwintering the Drought Code" *by* Megan McElhinny et al.

Anonymous Referee #1

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General Comments In this manuscript, the authors present a global high-resolution Fire Weather Index driven by data from ERA-5-HRS reanalysis. This work definitely adds value to the wildfire research field and it paves the road for further analysis and more studies. The method is adequate to the objectives and is well presented in the text. Some analysis could be added in order to improve the manuscript and make it a more robust work.

Specific Comments 1- In the paper, authors state that regional adjustments for the carry-over fraction from the previous season's fall moisture and the coefficient for the effectiveness of winter precipitation in recharging moisture reserves in the spring are

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Discussion paper

necessary when calculating the overwintered DC. The authors state that “As noted by Lawson and Armitage (2008) and Anderson and Otway (2003), the overwintered DC is most accurately represented when regional conditions are analyzed and the coefficients of the wDC function are adjusted accordingly. However, the ERA5 dataset did not contain information that allowed us to vary these coefficients and thus we chose the default values.” How sensitive is the dataset to those variables a and b? (lines 223-229)

2- As been discussed in the paper, Reanalysis products have biases. The bias can transfer to the newly calculated products. To show the robustness of the proposed dataset, I think the validation should be repeated and shown for a few regions prone to wildfires like the western United States or Australia.

Technical corrections 1- The quality of Figure 2 should be improved. 2- Is this a continuing product? If it is, the authors should mention that in the manuscript.

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