

Interactive comment on “Evolution of an extreme Pyrocumulonimbus-driven wildfire event in Tasmania, Australia” by Mercy N. Ndalila et al.

Anonymous Referee #2

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General comments

The manuscript entitled “Evolution of an extreme Pyrocumulonimbus-driven wildfire event in Tasmania, Australia” provides an analysis of the extreme fire event in Tasmania of 4 January 2013. The temporal evolution of the PyroCb is assessed using weather radar data and is then analyzed together with the McArthur Forest Fire Danger Index (FFDI), the Continuous Haines Index (C-Haines) and fire severity maps. Overall, the presentation quality is good, the results are well described and discussed, and the manuscript covers a relevant topic that has been gaining increasing attention over the last years. As such I believe that a revised version of the manuscript will present a good contribution to the fire community.

My main concern is regarding section 3.2.1 analysis of large wildfires (>500 ha) in
C1

the context of FFDI and C-Haines. Reasoning only about the number of large fires in the FFDI/C-Haines domain (Figure 5) can be misleading since, for example, when comparing the number of large fires for FFDI >25 or <25, as the number of days with FFDI < 25 is much higher, the interpretation of the figure may be biased. I would suggest plotting the smaller fires in other colour and computing for each of the 4 regions (delimited by the dashed lines) in Figure 5, the fraction of fires exceeding 500 ha. Reasoning about the fraction of large fires may be more insightful for the discussion.

Specific comments

L65: Is the range 0-13 correct? In Figure 4 the last class has a range of 12-14 and L367 refers values up to 13.7.

L165: 2.3? Also, a few sentences explaining the intuition of the VLS could be helpful.

Figure 3: What are the units for Max.height?

L255: What is the actual proportion for the 3 groups? It's hard to tell just from the image.

L265: The 0.5 correlation is for 1-day lag?

L282: It may be relevant to also comment on how extreme are these values regarding all days, for example, what percentile they correspond, 95, 99?

L363: Is this true for all fires or for all large fires (>500 ha)?

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-354>, 2019.