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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Linking local wildfire dynamics to pyroCb development" *by* R. H. D. McRae et al.

Anonymous Referee #1

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This compact paper presents a detailed analysis of a fire channelling event that occurred during the Goose fire event in Australia 2006. The authors had the chance to analyse multiple sources of observations, leading to good understanding of the phenomenon.

The paper is well referenced, with a good review on pyro convection in atmospheric science but maybe lacks a link to more fundamental studies in combustion that may be found in [1].

Only one event is analysed, so it may be difficult to validate assumptions made for a link between local dynamics and pyroCb based on this sole event. Nevertheless, the event is well documented and the numerous references helps to corroborate the link

demonstrated here, making it acceptable.

The paper is well written, with compact sentences easily understandable. As a non English speaker, I did not find obvious corrections to be made in this paper.

Comments :

Abstract and Introduction are well referenced, precise and easy to read

7272L5 Canberra fire resulted from large fire interactions, the authors are probably the most appropriate persons to comment on that. It is maybe somehow explained in the very dense sentence, but it may be worth explaining it a bit more as this event is the only other one explicitly cited in the text and would be a good introduction to the rest of the paper.

7272L23, what anomaly ? please explain.

7274L10, Is there a possibility to have some overview of the weather analysis maps to illustrate the phenomenon. Or at least a clearer view on figure 3 on where these stations are located and some lines about the general meteorological conditions (any fronts coming ? heat wave) that will make it more understandable for the non-meteorologist specialist that may not draw conclusions from these graphs.

7276L15, It is unclear what is linked to the fire, and what is related to global meteorological condition over east Australia. It is referenced, but please put a sentence explaining why these foen winds are present (warm lee winds over east Australian alps ?).

Considering the interesting phenomenon described, a major problem is the Figure 3 that is small and somehow unclear, probably requiring to be spitted and made larger (3a larger then the 4 others in 2 columns) so the text would be large enough to be read.

7278L12, There is definitely a simultaneity in events, but I do not understand what is quantitatively linked here, please be a bit more clear.

7280L28, which atmospheric features, a jet point in the wind profile is one, prevailing wind too somehow, please be more specific or remove the comment.

[1] Mark A. Finney and Sara S. McAllister, “A Review of Fire Interactions and Mass Fires,” Journal of Combustion, vol. 2011, Article ID 548328, 14 pages, 2011. doi:10.1155/2011/54832

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 7269, 2014.