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Comment

## ***Interactive comment on “Rapid and sudden advection of warm and dry air in the Mediterranean basin” by J. Mazon et al.***

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Received and published: 3 November 2013

Concerning the introduction to the topic, I would suggest Authors the following paper that might be of interest for them, in particular to enlarge the discussion on heat bursts that, indeed, are related to downward air motion, but not always in association with thunderstorms

<http://www.adv-sci-res.net/2/139/2008/asr-2-139-2008.html>

Concerning the need for a new definition, Authors state that it is based both on time-duration and on physical reasons (katabatic winds). I think that if the presence of katabatic winds is just a mere possibility, then it would not be necessary to introduce a new definition but simply extend the time duration of "heat wave" definition to encom-

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pass the Barcelona and Heraklion events. If, on the contrary, physical reasons are a fundamental aspect (not included in "heat wave" definition), then I would agree with Authors for a new definition.

Concerning the effects on "flash heat", I would encourage Authors to include some discussion on air quality. Sudden adiabatic temperature increases, indeed, favour ozone formation with consequent health impacts. Some data on hourly ozone might probably be retrieved by Environmental Agencies.

Concerning the numerical simulations, the (however slight) differences between observations and WRF outputs are intriguing. I would suggest authors to extend their comments on them. Might these differences to be connected with some PBL parametrizations? Or might them be related with orographic representation in the numerical model? Or might them be related to the sea boundary representation?. What pushes my curiosity toward these differences, is the fact that they are opposite in the Barcelona and Heraklion events.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 3735, 2013.

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