

## ***Interactive comment on “Quantification of the volatile organic compounds in the smoke from prescribed burning and comparison with the occupational exposure limits” by T. Barboni and P.-A. Santoni***

**Anonymous Referee #2**

Received and published: 9 January 2014

### General comments

The main objective of the research introduced in the manuscript is to contribute to the knowledge regarding exposure of foresters to smoke from prescribed fires. To reach the goal authors use data from previous field experiments whose results have already been published and that were focused on identification of compounds present in the smoke during prescribed burning events. In this work authors quantified concentrations of 14 organic chemicals and assessed firefighters' exposure risk to smoke by compar-

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ing compound concentrations with threshold limit values (TLVs). Although the topic is relevant, the manuscript seems to have been hastily written; consequently it needs to be improved in several parts. In general, the paper is not well organized; material and methods should be more detailed and some parts need to be moved from different sections. In addition, quality of English needs improving, revision of the text by a native English speaker is recommended.

### Specific comments

#### Introduction:

Pag 6506, lines 9-10: Probably objectives should be revised; if I have understood correctly, the aim of this MS is to give information on potential toxicity of vegetation smoke; so I suggest emphasizing this aspect. The originality of the present work in relation to the previous one needs more explanation.

Pag 6506, lines 11-14: Authors say that the study was carried out in 3 steps but I am not able to find where in the text VOCs present in the smoke of burning vegetation were compared with those found in prescribed burning smoke.

#### Experimental methods

I suggest adding a map with location of experimental sites and including coordinates and main species in table 1 so as to make reading easier.

Pag 6502 - line 25; pag6503 - line13: substitute “plot” for “site”

Page 6504- Lines 1-15: Have some authors used this kind of device before? If so, please cite reference.

Move paragraph 2.2 to the end of experimental method section

Pag 6504 line 3: explain the acronym ACGIH. Some other acronyms and abbreviations are not explained, please check the text.

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Pag 6505 line 2. At the end of this paragraph please detail which parameters you chose to assess toxicity of smoke compounds.

Results and discussion

Pag 6507 – lines 16-28 : Reasons behind your choice of focusing the attention on those compounds should be moved to experimental methods, to the beginning of paragraph 2.4 or to the end of paragraph 2.2.

Pag 6509 – lines 12-16: This information should be also reported in paragraph 2.2.

Pag 6509 – lines 12-28. Why are VLCT values not reported in table 3?

Pag 6510 – Formula for calculating the Em should be presented and explained in the experimental part.

Table 3: If you do not comment TWA in the text why do you show them in table 3?

Table 3 : The superscripts “a”, “c”, “d” and “e” do not compare in the table, so delete them from the table references.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 6499, 2013.