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www.nat-hazards-earth-syst-sci-discuss.net/2/C2943/2015/

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Calibration of FARSITE fire area simulator in Iranian northern forests" *by* R. Jahdi et al.

R. Jahdi et al.

r_jahdi@ut.ac.ir

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Reviewer #3: General comments

In general, the manuscript is a valuable contribution to the ïňĄre modelling knowledge in a country like Iran where studies on this topic are still very limited. However, in terms of methodology I note the presence of a critical issue that, in my opinion, justïiňĄes a minor revision since from it also depends the statistical evaluation of the simulator performance and then the ïňĄnal results. I refer to the criterion of combination of standard fuel model in order to simulate with FARSITE. I give an example for clarity: in YekeBermagh simulation V (which is also the best result for this site) the combination (GR4, SH1, SH2) exclude GS type models but in YekeBermagh vegetation type description

(table 1 and 3) there are grass-shrublands affected by the ïňĄre. The question is: why they are excluded from YekeBermagh simulation V? And also, what is the reason why some combinations were not considered (for example for Toshi site GR6-FM5-FM6-TU2?)

Thank you for the comments. We improved the manuscript taking into account the points highlighted.

Other minor comments: 1. Fig 1: the ïňĄgure is not very useful if the location of the two areas is not identiïňĄed more precisely Figure 1 was modified

2. Fig. 5: if these are vegetation maps, the classes relating to fuel types categories (timber litter) should not be included We corrected the citation.

3. Par. 2.6: Table 5 is probably Table 4 Done

4. Par. 2.7: Table 5 is probably Table 4 Done

5. Par. 2.7: Table 6 doesn't exist Corrected

6. Table 3: There are some fuels models not mentioned in the text and not considered in the simulations (GR5, GR1, GR2, TL2, and TL8). Why? In Table 3 we presented all fuel models used for the production of the landscape file. For the simulations, we changed the fuel models that were located inside the observed fire perimeters or that were located in a buffer of 100 m from the observed fire perimeter. This is the reason why some fuel models (TL2 and TL8) were not mentioned and considered for the simulations.

7. Table 4: in the Toshi simulation VI FM10 is reported twice Corrected

8. Table 4: in the Malekroud simulation V FM9 is reported twice Corrected

9. Table 4: in the Gharangi simulation VII FM10 is reported twice Corrected

About Table 4, we added some new fire simulations with different combinations of fuel

models, especially in Toshi and YekeBermagh wildfire case studies.

Please also note the supplement to this comment:
http://www.nat-hazards-earth-syst-sci-discuss.net/2/C2943/2015/nhessd-2-C2943-2015-supplement.pdf

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 6201, 2014.

Answers to Reviewers

EDITOR

COMMENTS FOR THE AUTHOR:

Editor´s comments:

Reviewer #1:

General comments

The article is not innovative because it consists in the calibration of a well-known fire behavior model (FARSITE) to a set of 4 fires in Iran. For this reason I think it should not be accepted in NHESS. In addition, this is an article: (i) very extensive that needs to be reduced by removing a large part and unnecessary repetition of text information displayed in tables and figures; (ii) repetition of the same information in different parts that also need to be removed; (iii) confused and needing to be rearranged because of the dispersion of information across different sections. There are a lot to explain and too many corrections to make. Most of the discussion section is composed by general aspects (e.g, lines 380 – 394), a repeated presentation of results (e.g., lines 410 - 422) but misses the true discussion/interpretation/validation of the obtained results. At this stage, the manuscript cannot be accepted for publication and should only be reconsidered after a major revision.

Thank you for the comments. We improved the manuscript taking into account the points highlighted.

Specific comments

1. Lines 40 – 50, It does not seem to follow the nhess rules for the citations
We corrected the citations.

2. According to the nhess "Informal or so-called "grey" literature may only be referred to if there is no alternative from the formal literature." With this in mind please remove citations on lines 150, 162, 783, 788 and 798;
We removed the informal literature.

3. Line 102, please replace "We tested different standard fuel models" by "We tested two sets of different standard fuel models";
Done

4. Lines 104 – 105, I believe that the authors did not analyzed this aspect;
We do not agree with this comment. For instance, Table 5 reports rate of spread, fireline intensity and flame length for each standard fuel model, for the best simulation, and for each case study.

5. Please avoid relative or imprecise concepts. For example, in line 111, please replace "This study was carried out considering a set of fires" by "This study was carried out considering a set of four fires"; what is a "not too strong" wind (line 361)? What are "relatively moderate values" (line 423)?
Done.
We also specified the wind speed conditions and better explained the sentences.

6. Line 116, please provide a definition of "xeric weather conditions" or substitute that concept by a more known concept by the general reader;
We replaced the term "weather" with "climate". We do think that the concept of xeric does not need further explanations.

1

Fig. 1.