

Interactive comment on “Modeling anthropogenic and natural fire ignitions in an inner-alpine valley” by Giorgio Vacchiano et al.

Anonymous Referee #2

Received and published: 29 January 2018

The authors of this paper present an application of MaxEnt modeling to fire ignition for an alpine region in Italy (Aosta Valley). In general, the paper is well written with a clear structure. However, I would like to make some comments on the following points:

In section 2.2, data analysis:

-You mention the fitting algorithm in MaxEnt. Could you please add more information about the way the best set of predictors is selected? You mention several mathematical transformations, but how much exactly. Moreover, what does “the regularization coefficient” mean, and how do you fix it at 1.5 ?

-You mention “data splitting was carried out by 5 bootstrap samples”. Could you clarify this process and explain how it is combined with the (70%/30%) subsets?

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-The “leave one out procedure assisted by jackknife repeated replication” is not clear. Could you please add more detail on this process?

In section 3, results:

-In table 1, you highlight the “Principal components analysis and selected predictors”, but the first column (PC) is not clear and it is difficult to associate each PC to the corresponding variable. Could you please modify or add more information in order to understand the mentioned results?

-You present the results of table 2, but only for IPP. What about %c? What are the main differences?

-Figures 6 and 7 are not clear at all. How did you obtain these figures? Please, indicate at least the method used in order to generate these plots.

-You mention the direct and inverse correlation between the ignition probability and the number of grazing domestic animals according to the summer versus winter fires (figure 7). But, does this variable (N_GRAZ_ANIMALS) vary according to the seasons? If yes, how would it affect the results highlighted in figure 7?

Minor comment:

-The percent permutation importance is first written as PPI, and then as IPP. Please check in the entire paper this issues, it should be better to uniform terminology within the paper.

Answers to the review questions:

1. Does the paper address relevant scientific and/or technical questions within the scope of NHESS? R:Yes

2. Does the paper present new data and/or novel concepts, ideas, tools, methods or results? R:Yes

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3. Are these up to international standards? R:Yes
4. Are the scientific methods and assumptions valid and outlined clearly? R: Should be clarify
5. Are the results sufficient to support the interpretations and the conclusions? R: Should be clarify
6. Does the author reach substantial conclusions? R:Yes
7. Is the description of the data used, the methods used, the experiments and calculations made, and the results obtained sufficiently complete and accurate to allow their reproduction by fellow scientists (traceability of results)? R: No
8. Does the title clearly and unambiguously reflect the contents of the paper? R:Yes
9. Does the abstract provide a concise, complete and unambiguous summary of the work done and the results obtained? R:Yes
10. Are the title and the abstract pertinent, and easy to understand to a wide and diversified audience? R:Yes
11. Are mathematical formulae, symbols, abbreviations and units correctly defined and used? If the formulae, symbols or abbreviations are numerous, are there tables or appendixes listing them? R: . . .
12. Is the size, quality and readability of each figure adequate to the type and quantity of data presented? R: Could be improve
13. Does the author give proper credit to previous and/or related work, and does he/she indicate clearly his/her own contribution? R:Yes
14. Are the number and quality of the references appropriate? R:Yes
15. Are the references accessible by fellow scientists? R:Not all references available.
16. Is the overall presentation well structured, clear and easy to understand by a wide

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and general audience? R:Yes

17. Is the length of the paper adequate, too long or too short? R:Yes
18. Is there any part of the paper (title, abstract, main text, formulae, symbols, figures and their captions, tables, list of references, appendixes) that needs to be clarified, reduced, added, combined, or eliminated? R: As mentioned in the comments, some figures and table should be clarified.
19. Is the technical language precise and understandable by fellow scientists? R:Yes
20. Is the English language of good quality, fluent, simple and easy to read and understand by a wide and diversified audience? R:Yes
21. Is the amount and quality of supplementary material (if any) appropriate? R: . . .

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