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Interactive comment on "Agricultural losses related to frost events: use of the 850 hPa level temperature as an explanatory variable of the damage cost" *by* K. Papagiannaki et al.

M.V.S. Sioutas (Referee)

sioutas@elga.gr

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General Comments

This work deals with frost risk assessment and the estimated subsequent economic damage to agricultural production, an issue of a high research and practical interest and in this context it is useful and welcome. The paper suggests an interesting methodology, it is well written, in appropriate length and with clear and substantial conclusions. Overall, I would recommend acceptance of the paper for publication to NHESS, with the following minor specific comments and technical corrections.

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Specific comments

1. In Section 1 (Introduction), page 2, line 12: "Weather is definitely the major risk in agriculture" is not an appropriate phrase and should be a changed to a something like "Extreme weather or adverse weather conditions. . .".

2. In Section 2 (Data and methodological issues), page 6, line 6: The term "daily announcement" should be more clarified i.e. includes the totaled insurance damage payments of the day? or all the individuals insurance records corresponding to each particular day?

3. In Section 2 (Data and methodological issues), page 7, line 2: The damage insurance level payments do not represent the total 100% of the crop damage. There are some "legitimate deductions" of the level of 15%. Also, damage level less than 20% is not paid and thus in not included in the insurance damage payments. This information should be included in this paragraph and if elsewhere needed in the text explaining that economic amount data examined do not represent the complete (100%) crop damage.

4. In Section 2 (Data and methodological issues), page 7, line 10: As the text in the following is everywhere referred to 850 hPa minimum temperature, it should be specified here if the minimum daily temperature value of the 6-hour time intervals was used in this analysis.

5. In Section 3 (Methods) page 9, line 5: The number of observations (N) as it referred to "daily damage announcements" should be clarified if they are total daily damage or individual damage records of any particular day.

6. In Section 4 (Discussion), page 14, lines 4-5: Given the smallest number of damage announcements and the smallest damage cost occurring in Autumn in comparison to other seasons, it is an interesting result that the probability of damage to occur is highest for Autumn to both North and South areas (Table 5). Is it a result primary related to temperatures or to frost vulnerability of exposed crop types in Autumn? any

comment or explanation is welcome here.

7. In Section 5 (Concluding remarks), page 15, line 11-13: Following the above, the conclusion here should be also completed with some small comment explaining the statistical high risk of Autumn frost damage costs, given the smallest overall frost damage events and cost exhibited in Autumn.

Technical corrections

1. In Section 4 (Discussion), page 14, lines 8, 12: Where it is referred temperature units "C", should be corrected to "oC".

2. Same corrections as above, page 14, lines 23, 25.

3. In Figure 2, the y axis scaling might be better readable if would be changed to million Euros, instead of Euros.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 865, 2014.

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