Nat. Hazards Earth Syst. Sci. Discuss.,
doi:10.5194/nhess-2016-182-RC2, 2016

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Uncertainties in Forecasts of Winter Storm Losses" *by* Tobias Pardowitz et al.

Anonymous Referee #2

Received and published: 1 September 2016

The authors investigate medium-range predictions of winter storm losses in Germany, taking into account uncertainties related to both the meteorological forecast and the storm loss model. While the deterministic forecasts had little or no skill for lead times beyond one day, the authors show that the prediction skill can be considerably improved when taking the two types of uncertainty into account in a probabilistic framework. The skill improvements are highest when both uncertainties are taken into account, enabling skilful loss predictions several days ahead.

General comments:

The paper is clearly written and logically organised, it reads very well and the methodologies are well explained. Apart from one more general comment that can hopefully be addressed easily, I mainly found a couple of wording issues or typos that need to

be corrected. After some minor revisions the paper should be suitable for publication.

On the example of one storm (pages 8/9) the authors demonstrate how accounting for the uncertainties increases the probability of losses occurring, and this improves the forecast for the case when a storm / damage occurs as the deterministic model strongly underpredicted the losses. However, I am wondering if this also increases (and by how much) the probability of damage when no storm occurred, thereby leading to a higher false-alarm rate? I would appreciate if the authors could expand on issues around false alarm rate.

Specific comments:

Title: the paper does not only report on uncertainties but also quantifies skill and shows how treating uncertainties increases the skill. Therefore I think it would be good to add "skill" to the title, e.g. "Uncertainties and skill in forecasts. . ." or similar

Section 2: As the different data (loss, COSMO, ECMWF EPS) cover different time periods, it would be good to say explicitly for which period the skill calculations were performed, for which period the downscaling was trained, etc.

Technical corrections:

page 1, line 30: not all references seem to be in the reference list at the end of the paper

page 2, line 27: would "records" be more appropriate then "measurements" when talking about the insurance data?

page 3, line 4: typo: inhomogeneities

page 5, line 7: end of sentence behind "over-dispersion"

page 5, line 12: comma at end of line behind "forecast ensemble"?

page 5, line 28: representative of

page 6, line 9: split the long sentence behind “loss ratio time series. The resulting. . .”

page 6, lines 19/26: past tense of forecast is forecast

page 6 section 3.4, it seems there is no explicit reference to setup ii)

page 6, line 28: 0.5 (decimal point rather than comma)

page 7, line 5: “ordered according to” rather than “after”

page 7, line 16: should the “and” (after has occurred) better be “or”?

page 9, lines 2/4: consider replacing “featured” by “recorded”

page 9, line 21: do you show “significant” or rather “positive” forecast skill?

page 10, line 5: consistent with

page 10, line 9: may the higher skill in northern regions also be due to higher average loss ratios in these districts?

Section 5: most of this sections reads more like a “Summary” rather than “Conclusions and Discussion”. I figure that the very last 3 lines (page 11, lines 23-25) may be your main conclusion?

page 10, line 28: specify “meteorological analyses”

page 10, line 30: too little ensemble spread

page 11, line 3: remove comma behind "fact"

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-182, 2016.