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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "The characteristics of lightning risk and zoning in Beijing simulated by a risk assessment model" *by* H. Hu et al.

Anonymous Referee #3

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1. GENERAL COMMENTS

Authors present a lightning risk assessment model which is based on several empirical concepts. They present and discuss comparison between results of the model and lightning observation and loss and damage reports. My understanding is that such kind of model can not be used to validate observations; on the contrary, observations need to be used to validate the model and, if necessary tune its parameter. I suggest that the authors modify in consequence their discussion and conclusions. For instance, on page 4132 line 24, they observe a ratio of 30 between predicted and observed annual casualties; it can't be deduced from this result that observations are wrong without a comprehensive demonstration. It is too optimistic to conclude that the comparison model-observation is acceptable. The model is constructed from sensible concept and

give sensible results: 1) casualties occur more frequently in countryside areas 2) damages loss on properties are more significant in urban areas. But, for casualties loss it seems obvious that "human behavior, location and activity", are important factor. Authors claim the opposite (page 4118 line 20): they must justify this hypothesis. In Introduction (page 4117, line 4), authors note that "lightning ...has been recognized as one of the most dangerous natural disasters". Is that really the case compare to earthquakes, tsunami, volcano eruption and flood?

2. DETAILED COMMENTS page 4116 line 17: what is "indirect lightning"?

page 4117 line 25-26: "the CG flash...density": ...as a consequence, the lightning risk relates to the CG flash/stroke density?

page 4118 line 10: error in a reference: Sonia and Gerard are only the first name of the authors

page 4121 line 8: I fail to find the definition of GDP in the paper

page 4122 (and in other place in the paper) Nx, according formula (2) is number of events per year and not not number of event per km^2 and per year.

page 4122 line 4: Ng is the average annual CG stroke density?

page 4125: casualty probability is related to building Lightning Protection Level, and physical damage probability is related to Lighting Protection System: please justify the difference between the two risks.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 4115, 2013.