Solid Earth Discuss.,
doi:10.5194/se-2016-150-RC1, 2017

Solid Earth Discussions

Interactive comment on "Path and site effects deduced from transfrontier internet macroseismic data of two recent M4 earthquakes in NW Europe" *by* Koen Van Noten et al.

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Received and published: 12 January 2017

Path and site effects deduced from transfrontier Internet macroseismic data of 2 recent M4 earthquakes in NW Europe Review by R. Bossu

This ambitious paper covers 2 different topics. It proposes a way how to spatially merge different Internet macroseismic data and it proposes an explanation of the obtained macroseismic maps in terms of path and site effects.

It is a rather long article with a rich list of references and is generally well written article. It covers an important topic which is how to merge Internet macroseismic data collected at national level for transfrontier earthquakes (as explained below this issue is not fully

covered and only address the spatial grouping of individual observations). This topic is important because national institutes generally collected many times more data that international organisation such as the USGS or EMSC.

There are however a number of points that could improve the readability of the manuscript and its overall quality âĂć In the text, the authors have been using Âń Did you Feel it Âż not only to present the tool developed and operated by the USGS but also more generally for Âń Internet macroseismic data Âż. (One should note that the title do use the latter). I find this confusing. I believe this distinction should clearly appear in the text. DYFI was the very first online macroseismic tool, several institutes have implemented the same questionnaires, but others have developed their own approach.

âĂć My second issue is about the description of the data used. I believe that a description of the methodology for each data provider (perhaps in appendix) would be useful. Is it a questionnaire (or thumbnails), how are the locations determined (zip code, geocoded full address, nearest city which was an option at EMSC when eyewitnesses declined to provide their full address) and how the intensity is assigned.

âĂć The paper makes a very strong assumption (last sentence of page 2) that intensities may slightly differ from one country to the other (due to differences in questionnaire and/or intensity assignment procedures). Some of the data presented in this paper contradict this statement: the EMSC macroseismic data derived from questionnaires had to be excluded because they differ too much from the other datasets. (For information, these excluded intensities had been assigned by an algorithm developed by one of the father of the EMS98 scale). What I want to stress here is that there is no reference to such a statement and my own experience, or recent by Hough, Martin et al comparing macrosemsic datasets for Ghorka earthquake do not support it. This is probably too much work to fully address this issue, but the assumption that differences in intensity from one country to another are slight should be made clear and explicit.

âĂć A consequence of the previous point is that the methodology is about the spatial grouping of different Internet macroseismic data only.

âĂć In the second paragraph of the introduction, the EMSC is presented alongside the national institute while it works similarly to the USGS Did you feel it. This seems to indicate there is no transfrontier and international internet macroseismic data collection in Europe or that EMSC works at national level, which is not the case.

âĂć There is an incomplete sentence at the beginning of paragraph 2.2

âĂć There are a number of inaccurate statements:

o EMSC does not request not felt response from volunteers. The LastQuake app send notification after felt earthquake to people in the area and some of them may react to this notification by sharing their testimony o First sentence of the conclusion is inaccurate. Transborder macroseismic maps exist in Europe at EMSC. The challenge is to create a denser and possibly more accurate one by merging national datasets. o Third paragraph of the conclusion: the paper does not demonstrate “strongly improves the quality of real time intensity evaluation of individual agencies”. Neither intensity assignment nor real time processing is covered in this article

In conclusion, I believe this paper is important. It covers a variety of issues from spatially merging Internet macroseismic datasets to variations of attenuation. There are however a number of shortcomings and inaccuracies to be corrected which will further improve the quality of the paper.

Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-150, 2016.