

Interactive comment on “Assessing qualitative long-term volcanic hazard at Lanzarote Island (Canary Islands)” by Laura Becerril et al.

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Title: Assessing qualitative long-term volcanic hazard at Lanzarote Island (Canary Islands) Author(s): Laura Becerril et al. MS No.: nhess-2017-2 MS Type: Research article

Dear Authors:

I have read the article titled "Assessing qualitative long-term volcanic hazard at Lanzarote Island (Canary Islands)" by Becerril et al. Scarpati. The manuscript presents the first integrated volcano hazard map of Lanzarote (Canary Islands) by using a systematic methodology to conduct long term hazard assessment of the Island. Lanzarote

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produced the largest historical eruption of the Canary Islands between 1730-1736 (Timanfaya eruption) that is the second largest in Europe after the 1783 Laki eruption in Island. Today, Lanzarote is one of the main tourist attractions of the Canaries with circa 1.5 million tourists per year. With such a recent volcanic activity and people visiting for recreational purposes a comprehensive hazard map of the island was needed. The authors have performed previous studies that include a susceptibility map (Bartolini et al., 2013), a stress regime model (Geyer et al., 2016), physical volcanology (Marti and Colombo, 1990; Pedrazzi et al., 2013) among other to conduct this study. The authors gathered all available information and integrated it into their analysis that has been tested elsewhere (Marti et al., 2016; Bartolini et al., 2013). The authors used computer programs that have been tested at other volcanoes to simulate possible scenarios of lava flows, pyroclastic density currents, and fallouts throughout the island. The resulting hazard maps are easy to understand because they are presented in a simply colorful way.

Therefore, this manuscript represents an excellent contribution for NHESS journal because it presents a new hazard assessment of the island that must be considered by local authorities to plan risk scenarios and risk maps in case of future eruptions.

Text was written in a very comprehensive way and it is properly organized. English, although I am not a native speaker, is very good containing a few typos and minor corrections that can be easily addressed (marked in the attached file). Figures are of high quality and needed to support the text, the same is valid for the tables used.

Sincerely yours,

Dr. José Luis Macías Instituto de Geofísica, UNAM, Morelia macias@geofisica.unam.mx

Specific comments:

See attached pdf file.

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Please indicate in section 7.2 Lava Flow Scenarios which program was used to simulate lava flows it is not mentioned in the text.

Figures:

Figure 1. Legend Change the color of the 2011-2012 eruption, it is not visible or it is too small? The box of the Timanfaya eruption in the legend does not match that of the map

Figure 2. Legend In the box labels you mixed eruptions with deposits so you need to define them in an homogeneous way for instance: Historical eruptions (1824) or Lava flows and pyroclastic (1824 eruption) What is the meaning of subhistorical?? Fig. 2b caption mention the diameter of the crater Fig. 2b and 2c please indicate the orientation of the photographs

Figure 4. change obtained in a NE-SW area. for obtained along a NE-SW oriented area.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-2/nhess-2017-2-RC1-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2017-2, 2017.