

Interactive comment on “High-resolution modeling of atmospheric dispersion of dense gas using TWODEE-2.1: application to the 1986 Lake Nyos limnic eruption” by Arnau Folch et al.

Arnau Folch et al.

arnau.folch@bsc.es

Received and published: 18 April 2017

We thank the anonymous reviewer #2 for his/her revision.

o Looking at figures 3, 4 and 13 there are some areas where fatalities occurred (for example L30 and L33) and that are not accounted by any of the models. It could be interesting to add some comment about this in the discussion (still some wind change that was not accounted or some limitation with the digital elevation model?).

Minor comments and typos

o Line 43 (page 1): I suggest to add the information that CO₂ is denser than air at STP
Done

C1

o Line 90 (page 2): remove one endpoint that is in excess Done

o Lines 5, 14, 17 and 21 (page 4): check and correct the number format. Done

o Lines 5 to 22 (page 4): Authors use the thresholds mentioned by Costa and Chiodini (2015) to discuss the exposure limits for the CO₂. References should be added for the symptoms and time of exposure mentioned for the 10%, for instance, since differences exist in the literature for the levels of CO₂. As an example, some works mention that on the presence of 10% CO₂ fainting can occur, so the 10-15 minutes mentioned by the authors in this article seem to be too long for exposure to these concentrations. In this paragraph authors should also mention the STEL for the CO₂, which is 3%, value that is after used as the SLOT (it would be important to mention it before appearing as SLOT, as it is also defined as the STEL by OSHA, NIOSH and other international entities); We have enlarged this section and added references (Harper, 2011) as suggested.

o Lines 47 and 51 (page 9): check the format of the CO₂ (2 needs to be as subscript).
Done

o Figures 4 and 13 - the dimension of the circles is too small (difficult to read). I suggest to increase the dimension of the circles. Done

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-343, 2016.

C2