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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.

Anonymous Referee #1

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The manuscript of Folch et al is the refinement of a previous work regarding the application of a recently developed code (TWODEE) able to describe the air dispersion of the CO2, a heavy gas much denser than air, and its impact in the territory. As the previous work, the application regards the Nyos lake disaster and the simulation of the cloud released by the lake in the evening of the 21th of August 1986. A part from the more reliable results obtained by the new application, the work is of general interest because it includes the improvement of the code itself, with the addition of a routine for the simulation of local wind conditions starting from a large scale wind field, and the development of a new statistical tool able to investigate in a probabilistic frame the occurrence of fatalities. Probably for the first time in the many reviews that I did, I do

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Discussion paper

not have any suggestion to improve the manuscript that is already excellent in this first version. Only a very minor, technical point about the quality of the figures 3, 4 and 13 where the coloured circles used to show the percentage of fatalities are too small and not easily readable and the colour scale in the legends should indicate “% of fatalities” and not just %.

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