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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Comment on "Global risk of radioactive fallout after major nuclear reactor accidents" by J. Lelieveld et al. (2012)" *by* J. Lelieveld et al.

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Pareto-type extreme value distributions

Such approach (I am not familiar with the theory behind it) might be appropriate to try an extrapolation to the next catastrophic reactor accident. The Pareto-distribution is characterized to be 'scale-independent'.

Authors state they have alternatively considered this distribution and collected information of all INES-reported accidents. However, the scale properties of INES from 0 to 7 are not defined. This is equivalent that there is no scale and, consequently, this scale does not have any properties.

Authors report that they found small accidents being underrepresented in the reported data; with other words, the Pareto-distribution cannot be fitted to the available data. And any extrapolation to the level of catastrophic nuclear accidents is not justified.

It is a common example for advanced statistics being applied by unexperienced researchers to data on a nominal scale as the INES-scale is basically unjustified as the model is not valid on nominal scales. Being no expert, I am not aware whether the Pareto-approach is appropriate for nominal scales.

It remains undisclosed for what purpose the authors in their response referred to this particular problem.

It must be repeated again that I am not the expert in 'advanced statistical methods'; however, to my understanding of the basic problem it remains in the dark what those comments by the authors could contribute to understand their original publication.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 19303, 2012.