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Comment on nhess-2021-213

Anonymous Referee #2

Referee comment on "A unified probabilistic framework for volcanic hazard and eruption forecasting" by Warner Marzocchi et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-213-RC2>, 2021

It is very good to see this exposition of the probabilistic framework for PVHA. However, the testing of this framework is disappointing, because of the low eruption frequency at Campi Flegrei, which is a limitation recognized by the authors. The ideal laboratory for testing alternative PVHA methodologies is a volcano which has sporadic bouts of activity over a decade or more. An example is Montserrat from 1995 onwards. Some attempts have been made to validate probabilistic forecasts for Montserrat against actual eruptive events, but this has not been done in a systematic manner, because these were early days in PVHA, and the resources were limited for updating PVHA regularly.

The paper makes much of the experimental concept of testing model validation, so there should be a convincing example of such validation. The convenience for the authors of Campi Flegrei is of course well appreciated. However, the authors should identify a more active laboratory for adequately testing their PVHA approach.