Comment on essd-2022-42
Anonymous Referee #2


The manuscript "Long-Term Ash Dispersal Dataset of the Sakurajima Taisho Eruption for Ashfall Disaster Countermeasure" is an exercise on reproducing the ash dispersal from a major eruption of Sakurajima volcano. When I appaluse to the effort of producing large scale ash dispersal simulationover Japan, I have to point out that the manuscript suffers of several flaws that need to be fixed before consideration for publication. The main criticisms can be summarised as follow:

i) Reproduction of ash dispersal from past eruption is an exercise already published elsewhere and for a number of past eruptions. I have to say with better results than for the Taisho eruption. This is probably due to the poor constraints on actual deposits and the broad assumption on metereological model used for running the simulations.

ii) Because the paper states several times that the main goal is to have an ash dispersal map to be used for hazard mitigation, the choice to simulate only one specific day is puzzling to me. Modern studies on hazard from ash dispersal use thousand of simulations to produce probabilistic maps of ash deposition, able to capture the meteorological variability. Why to consider only the conditions of a given day? What are the meaning of this map in the light of ash fall hazard? Indeed, the probability to have the chosen condition for a future eruption at Sakurajima are veey low. So in which way these simulations may help in drawing hazard maps?

Honestly, I think the manuscript, in its present form, is of poor usefulness for ashfall hazard mitigation over Japan.