

Atmos. Chem. Phys. Discuss., referee comment RC2  
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## Comment on acp-2021-155

Anonymous Referee #2

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Referee comment on "Geometric estimation of volcanic eruption column height from GOES-R near-limb imagery – Part 1: Methodology" by Ákos Horváth et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-155-RC2>, 2021

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"Geometric estimation of volcanic eruption column height from GOES-R near-limb imagery – Part 1: Methodology" is a very interesting manuscript presenting a relatively simple method with good accuracy for estimating the top height of volcanic clouds. Considering that there are a few geostationary satellites available, it is possible to observe Etna, as an example of a well studied volcano, from Meteosat over Indian Ocean with the proposed technique.

The manuscripts seem at first sight a little bit long, but there are no repeating parts, everything is written with a high level of detail. From the structure and the language point of view, I have not many comments. The only thing I would like to address is the conclusion - at the moment it seems more like a summary to me, make it more concise - focus on your scientific contribution and a relation to part 2.

Besides some minor remarks, just below, I have no further major comments, thus I suggest publishing the manuscript after technical correction.

Section 3.2. What about the case when the volcanic cloud contains a lot of "topography"? Then measuring the length from the side considered only the height of the side of the cloud.

Your list of references is good, but considering your geometric approach, I would suggest adding:

<https://www.mdpi.com/2072-4292/11/7/785>

<https://www.sciencedirect.com/science/article/abs/pii/S0034425718300737>