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Interactive comment on "Very high-resolution terrain surveys of the Chã das Caldeiras lava fields (Fogo Island, Cape Verde)" *by* Gonçalo Vieira et al.

Moritz Kirsch (Referee)

m.kirsch@hzdr.de

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The main aspects I would like to see covered in a paper that serves as a description of a dataset is an objective, a concise intro to the area, acquisition parameters, and a quality assessment. In this paper by Viera et al., only some of these aspects are appropriately addressed, while others are incomplete or too extensively covered.

The study objective is only very broadly defined. Mapping accuracy is mentioned as a potential gap in knowledge, but the significance of that gap is not clearly stated. While it's true that a DEM is a versatile dataset that can potentially be useful for a lot of different applications, a clear objective is key for developing an appropriate survey plan to maximize the identifiability of the sought-after features. Regarding the introduction of

the area, most of the pertinent info is already in the paper, although currently spread out between introduction and chapter 3. Figure 1 could be improved to include an overview map of the island chain, elevation, and geological information such as mapped extents of lava flows and labels of the geomorphic features mentioned in the text. Chapter 2 contains a nice review on the use of UAVs in volcanology, but in my opinion, it is not relevant for the scope of this paper. The survey parameters are sufficiently well described, although, again, it is difficult to judge the appropriateness of the survey plan without a clear objective. The assessment of the quality of the photogrammetric results need to be revised to include standard metrics (papers by Mike James et al.), perhaps also a comparison to state-of-the-art datasets, cross sections perpendicular to flight lines, point density metrics. The noise level can be evaluated efficiently by comparison with planar structures, such as buildings.

I understand that the focus of this contribution is on the data itself and not derivatives or interpretations, but since you decided to include an analysis of the lava flow area, it would be interesting to know how the lava flow was delineated (manually, semi-automatically? using what criteria?) and what the implications of this analysis are.

The data itself should prove very useful and I commend the authors for making it open access. Please also publish the raw images, or the Pix4D project to allow reprocessing of the point cloud as photogrammetric software is continually improving.

I also found some minor spelling and grammatical errors, which I highlighted in a commented version of the manuscript.

Please also note the supplement to this comment:
https://essd.copernicus.org/preprints/essd-2020-289/essd-2020-289-RC3-supplement.pdf

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