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Interactive comment

Interactive comment on "Feasibility of three-dimensional density tomography using dozens of muon radiographies and Filtered BackProjection for volcano" *by* Shogo Nagahara and Seigo Miyamoto

Anonymous Referee #1

Received and published: 29 June 2018

This is a very nice paper although of limited applicability in real case Muography where only a few measurements can be made and at different altitudes.

The authors show that the Path Length Normalisation Approx. has greater precision with respect to the standard Feldkamp inversion, still it would have been perhaps more useful to focus on fewer observation points (3 to 8) and see whether an iterative computing intensive procedure would have produced better results.

Anyway, the results the athors obtain are significant and in my opinion the paper should

be published with minor revisions. See the following comments.

English needs revising, many instances of wrong grammar and unclear constructs. For example: 39) Therefore, when we assume "density length", which is the integration of multiplication of density and material thickness .... (integral ?)

40) Singular/plural mispelling (Muon detection technology also have been ...)

117) In a 3D case, if observation data have an elevation angle and observation points only exist on the circumference, a complete inverse Radon transform does not exist.

Typo or missing sentence: 215) Figure 4a shows the observation state at observation point A in figure 3, and Fig. 4b shows the theoretical muon count observation ðİŚĄ0(ðİŚŃ, ðİŚ∎, 0) at that time. ðİŚĄ0(ðİŚŃ, ðİŚ∎, ðİŻ¡) is the It is not suitable to use muon flux table in the region of 10 meter water equivalent or

Other comments: 19) From a volcanic perspective, airborne radar is commonly used to measure and analyze mountain topography. Topography usually derives form satellite or airborne imaging, and if you really want precision, laser scans not radar mapping. Please clarify, and give sources.

45) These citations are swapped, Ambrosino is plastic scintillators ... (hodoscope by scintillating plastic bars (Jourde et al., 2013), glass resistive plate chambers (Ambrosino et al., 2015),)

Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., https://doi.org/10.5194/gi-2018-11, 2018.