

Interactive comment on “Inner structure of the Puy de Dôme volcano: cross-comparison of geophysical models (ERT, Gravimetry, Muonic Imagery)” by A. Portal et al.

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Reply to anonymous Referee #2:

We thank the referee for the careful reading of the article and for pointing out the unclear points. We tried to answer all the suggestions/comments, please find below the detailed answers.

The authors should report (e.g.: in fig.2) the location of the muon detector, in order to provide information on the field of view of the instrument. This is necessary for the comparison of the three pictures in Fig.5.

The location of the muon detector during the Grotte Taillerie campaign now appears on Figure 2.

Please, provide a simple explanation of what you mean by “non-standardized” attenuation coefficient, regarding the muon radiography results. Which kind of corrections did you perform on the raw data?

Following also Dominique Gilbert’s comments, we modified the text as following (*see herebelow*). More details can be found in the companion article Cârloganu et al. (2012) which is cited.

Our text on this issue is now:

"Preliminary results for the Puy de Dôme opacity to atmospheric muons, measured in the Grotte Taillerie (radiography along the north-south section) are presented and discussed elsewhere (Cârloganu et al., 2012) (Figure 5, c). This opacity is highly correlated to the integrated density along measurement viewpoints, though the muon radiography measurement is too preliminary to claim a density measurement using muons."

The bibliography is too short. Among the others, I suggest to cite similar works regarding the comparison of muon radiography with geophysical data (see e.g.: Lesparre et al., *Geophys. J. Int.*, 185, p. 1-14, 2012).

New bibliographic references have been added. In particular, several topic papers referring to similar comparative studies have been included in the article.