

Response to Review of Referee #1

Manuscript ID: AMT-2014-334

First of all, we would like to thank the anonymous referee for his/her valuable comments, which have helped to improve the manuscript. In the revised manuscript, we have tried to accommodate the suggested changes. All comments and recommendations are copied here as underlined texts.

My reaction to the paper is that it would be good to compare the method proposed to a much simpler method described in Zerefos et al., 2007, 2014 where digital pictures were also used to calibrate the method before, during and after the overpass of a Sahara dust event over an experimental site. The method is simple and relies on calculating red-to-green ratios measured either in digital photographs, in situ and painted by professional colorists. Therefore I would like to see a short discussion on the methods. It appears that large volcanic eruptions have left a high red-to-green ratio either in digital pictures or in paintings by great masters in the past.

Answer:

As the referee suggested, we have added introductive short discussion in section 1 page 194, line 4 as follows:

“Zerefos et al. (2014) tried to retrieve AOT using a color ratio R/G, given by digital counts in the red, green and blue (R, G and B) channels, from digital photographs and digitalized paintings drawn during the time around sunset in the past hundreds years. The results agree well with other ground-based observations.”