

"General comments"

This paper addresses relevant scientific questions within the scope of ACP. It presents original and interesting works leading to substantial conclusions. It is well structured and clear. In consequent, I recommend its publication with minor revision.

"Specific comments"

1- Several samples were collected, but considering the technical difficulties for sample preparation, one sample was only studied for its mineralogical properties and internal structures (collected the 15 July 2005 at 9:33). How was it chosen among all samples? Which impaction stages were selected? Why? What was the PM_{2.5} concentration during sampling? It should be more precisely exposed in the "sample and methods" part.

2- Criteria used for the identification of predominant minerals both from EDX data and electron diffraction/lattice fringe imaging should be presented in supporting information.

3- In the section 3.1, the relative abundance of clay mineral particles obtained from SEM-EDXS data (Table 1) for the Tenerife sample is directly compared with the total clay content (in wt%?) determined by XRD for a Cape Verde sample, but they are two different physical parameters. This point should be clarified.

4- In the section 3.3, the volume of iron (hydr)oxides in the dust particles is estimated. Two dimensions of the iron grains in dust are obtained from the bright-field TEM images, but how is measured the third dimension, notably for internal grains? From EDX maps? It should be explained.

5- The section "3.5 Shape of dust particles" notably presents the methodology to measure the total particle volume, so it should be inserted before the part 3.3 in which particle volumes are presented and also discussed (sup Table 1).

"Technical corrections"

6- (Avila et al., 1997) is cited in the introduction, but (Avila et al., 1996) is listed in the bibliography.

7- (Conny, 2013) is cited in the introduction, but it is not among the listed references.

8- Figure 1: What is the level high of the arrival air masses for the backward trajectory calculations by HYSPLIT? It should be mentioned in the Figure caption.

9- Figure 2: The meaning of yellow lines is given two times in the Figure caption.