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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Trace metal characterization of aerosol particles and cloud water during HCCT 2010" *by* K. W. Fomba et al.

Anonymous Referee #1

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General comment:

This study tries to demonstrate the role of cloud in processing of trace metals associated with atmospheric particles/aerosols in different size ranges. Four full cloud events (FCE) have been investigated in which air masses were found to pass through all three monitoring stations namely Mt. Schmücke (in-cloud mountain station), Goldlauter (GL, upwind of the summit station) and Gehlberg (GB, downwind of the summit station). Various aspect affecting the size distribution of trace metals in aerosol due to cloud processing have been highlighted. Overall, this study is very interesting and of great interest for Aerosol-Cloud-Chemistry community. This manuscript fits well in the special issue of this journal (HCCT-2010) and thus, I recommend to publish this upon minor revision.

Specific comments: 1. Page 10901, Line 9-14: Proper reference indicating role of trace metals influencing OH radical budget must be cited.

2. Page 10901-10902, Line 27-28, 1-2: Statement is not very clear. Kindly reword it.

3. Page 10910, Line 1-4: Fig. 2 shows scatter plot of Levoglucosan with K, Zn, Pb and As. Plots have 5 data points but there are 4 FCE. Is it only PM1.2?

4. Page 10910, Line 26-27: Correlations are NOT conserved for any metal. It is weaker at GB for all except Zn. Correlation coefficient for Ti is missing.

5. Kindly mention the level of significance (p-values) for all correlation plots.

6. Pg 10911, Line 16-18: Proper reference must be cited for EC and OC emissions.

7. Page 10918, Line 21: Table 1 and 3.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 10899, 2015.