Atmos. Chem. Phys. Discuss., 15, C3120–C3121, 2015
www.atmos-chem-phys-discuss.net/15/C3120/2015/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Concentrations and solubility of trace elements in fine particles at a mountain site, southern China: regional sources and cloud processing" *by* T. Li et al.

Anonymous Referee #2

Received and published: 31 May 2015

This study provides various information on the concentrations and solubilities of many metal ions in the atmosphere around Mt. Lushan, southern China. Since air pollution in China has been an important issue which can affect air quality not only in China, but also in other parts in East Asia due to the long-range transport. Thus, I think that this study is worth publishing to reveal information of the metal ions in fine particulate matters in the atmosphere in East Asia.

2.2. Sample collection: More details of the sampling of the cloud residues must be described.

2.3.2 Water-soluble fraction: How can avoid precipitation of highly insoluble elements such as Fe3+ and Al3+ by extraction using pure water. If the pH is above 5, the soluble Fe3+ in water is less than 60 ppb. Is it possible to keep ferric ion in the water and to avoid formation of iron precipitates in your samples?

Results and discussion: (1) The solubility of metal ions has been investigated in various studies. Thus, it is essential for the authors to compare their results with other published data. In particular, the difference of the protocol to extract metal ions among different studies must be reviewed to compare each result.

(2) The experiment for the cloud processing is interesting. However, please write more details about the experiment such as (i) how did you collect the cloud water and (ii) how did you prepare the cloud residue.

(3) This study suggests that Ba is of metallurgical smelting origin. What kind of smelting activity can be suggested as a source of Ba.

P.13010, L1: "contributed the highest" should be "contributed to the highest".

P.13012, L1: "applied to identify" should be "applied to identification of".

P.13017, L13: "That" should be "This result".

P.13017, L22: "contributed the" should be "contributed to the".

Fig. 2: Unit must be shown for the vertical axis.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 13001, 2015.