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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 #1

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General

This is an interesting study on 'trace elements', i.e., in my understanding metals, in aerosol particles sampled at Mt. Lushan in southern China in summer 2011 and spring 2012.

The measurements are interesting with regard to the implications of cloud processing and because the studied metals are tracers for a variety of sources.

The back trajectory and source contribution modelling in the papers shines light on the origin of different families of metals.

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I wonder how it can be better evidenced that the aerosol particles sampled in Guniubei have really been cloud-processed ? As of now, it seems that this is Observation based, in that if there was a cloud at Mt Lushan, the sampled particles were assigned as 'cloud-processed '. Is there an objective way to flag samples that they must have been cloud-processed ?

Another detailed map of the orography of the site, i.e. the mountain, the sampling place and key meteorology parameters would also be of assistance to the reader. Maybe some supplementary material can be used for this.

Overall, this is a very nice and thoughtful contribution which merits publication in ACPD subject to minor revision

Details

Page 13003, line 4: Atmospheric lifetime of particles should not be much beyond 10 days, cf Jaenicke (1978), pls reconsider the statement of 'weeks'

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

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