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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "Seasonal variation of secondary organic aerosol in Nam Co, Central Tibetan Plateau" *by* R.-Q. Shen et al.

**Anonymous Referee #1**

Received and published: 8 April 2015

This manuscript reports the measurement of 13 SOA tracers from both biogenic and anthropogenic precursors in the particulate samples collected at Nam Co. The seasonal variations of isoprene SOA, monoterpene SOA and aromatic SOA tracers at Nam Co were interpreted by the temperature effect on the precursor emission and gas/particle partitioning. Source apportionment was carried by using the SOA-tracer method and the backward trajectory analysis. This is a well written paper and could be accepted by ACP if the following issues were addressed. 1. The temperature change could have two opposite effects on the SOA production. Decreasing temperature could reduce the precursor emission but enhance the gas to particle partitioning. The interpretations of the seasonal variation of SOA levels are quite confusing. It would be much better to develop a simple model to quantitatively or semi-quantitatively evaluate



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the temperature effect here and reveal which process (emission or partitioning) is dominant. 2. The large uncertainty of the SOA-tracer method and the simple backward trajectory analysis make the source apportionment in this work not very convincible. More detailed information about the anthropogenic emissions from Indian subcontinent and inland China would be helpful for the SOA source apportionment.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 7141, 2015.