

***Interactive comment on “Source-receptor relationships for speciated atmospheric mercury at the remote experimental lakes area, Northwestern Ontario, Canada” by I. Cheng et al.***

**Anonymous Referee #2**

Received and published: 6 January 2012

The manuscript reports the source-receptor relationships for speciated atmospheric mercury measured at the ELA, Canada. The conclusions are mainly drawn from a number of statistical receptor modeling techniques including correlation analysis, principal component analysis, cluster analysis and trajectory analysis. This is a well-crafted source-receptor study. The manuscript is organized and nicely written. I also agree with most of the authors' analyses/conclusions and only have a few minor suggestions:

(1) In Table 3a and 3b, the criteria for statistical significance are different ( $p=0.01$  for Table 3a and 0.05 for Table 3b). It would be more consistent to make the statistical criteria the same. (2) In Section 3.2, the authors discuss the seasonal source char-

C13921

acteristics of the potential sources. I wonder if it is a possibility to perform a seasonal trajectory analysis to verify the results obtained from the correlation analysis. (3) The trajectories shown for each cluster in Figures 2 and 3, although representing the same cluster, still look quite scattered. Can the authors explain the possible reasons in the discussion?

---

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 31433, 2011.

C13922