

The paper is well written and covers a topic of great interest for updating the ion sources on CIMS. With the inclusion of the brief tests of the cations the paper is even more pertinent. Recommend publishing with the following issues to be addressed.

Line 29: isobars should be isotopes

Line 36: Unclear sentence 'Relative to nitrate...' Nitrate CIMS cannot measure amines and highly oxygenated organics

Line 88: units of pressure in formula is Pa while the rest of the paper is mbar. Should change to mbar

Line 178 & 229: Is 18sccm of water vapor really added or 18sccm of saturated N₂ added?

Line 315: Depending on the C₃H₆ to NH₃ concentration if both are added to the tube illuminated by the VUV lamp, the reaction scheme could be:

- 1) $C_3H_6^+ + C_3H_6 \gg C_3H_5 + C_3H_7^+$
- 2) $C_3H_7^+ + NH_3 \gg C_3H_6 + NH_4^+$

As the PA of C₃H₅ (736) is less than that of C₃H₆ (751).

Scientific significance:

The paper is of great significance now with the continued development of a replacement for the radioactive ion sources used previously. Not only are they safer, but even generate higher sensitivities.

Scientific quality:

Experiments in the paper are well done with a very good description of the instrument used.

Presentation quality:

Well done and no recommended changes.