

Interactive comment on “A fast and precise chemiluminescence ozone detector for eddy flux and airborne application” by A. Zahn et al.

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Thanks for the praise!

Your comment "no sensor discs are currently available" is not really true, as explained in the second half of the conclusion. There are at least some dry CI instruments in use worldwide and to our knowledge primarily Bagus discs are used (or home-made discs, e.g. onboard the Russian Geophysica). As also written, the development of new discs has started in Mainz and in the meantime quite sensitive and durable discs became available.

We updated the conclusion in the new manuscript version as follows:

Currently (December 2011), the new sensor discs from Mainz reach almost (75 % of) the initial sensitivity of the Bagus discs (i.e. are slightly more sensitive than the old GFAS discs we have used here) and the durability could be enhanced to an O₃-dose of ~7000 ppbv·h. It can currently not be foreseen when these new types of sensor discs will be commercially available. These new sensor discs will become available early next year (Mainz, personal communication). Their development and properties will be described in an independent publication.

Importantly, the performance of the O₃-sonde described here is independent on the properties of the sensor disc. The instrument signal is certainly proportional to the sensitivity c of the sensor disc (equation 18) and the instrument precision ($1-\sigma$ noise) is proportional to the square root of c . With the actual sensor disc sensitivity c , which depends on the disc material, age, and manufacturing (which may cause significant inter-disc variability, Muller et al., 2010), the actual measurement precision can easily be inferred from the equations 19 and 20.

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