

Interactive comment on “Ground-based intercomparison of two isoprene measurement techniques” by E. Leibrock et al.

E. Leibrock et al.

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Thank you very much for your comments and suggestions concerning our paper.

You are correct in pointing out that besides the observed anthropogenic interference, there seems to be an additional interference in clean conditions, when the wind is coming from remote sites (see sector from 300 to 350° in Fig. 5). One possible explanation might be an interference from 2-methyl-3-buten-2-ol (MBO), a biogenic compound emitted by pine trees like the ones to be found in the foothills and mountains northwest of our measurement site. In several studies, MBO has been shown to be emitted by North American pine forests (e.g. Goldan et al., 1993; Harley et al., 1998; Schade et al., 2000). We also demonstrated that MBO actually quite strongly interferes with our isoprene measurement (see Leibrock and Huey, 2000). Unfortunately, with our current quadrupole mass filter technique, we cannot separate between products resulting from isoprene and products from other compounds forming mass 146 amu. We therefore

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cannot be sure about the nature and origin of the interferences observed. Only with the introduction of a tandem technique, such as an ion trap, we will be able to differentiate between different products with equal masses. We clarified this point in the revised version of the paper.

We also agree with your second point that high sensitivity and fast time response alone are not sufficient for eddy correlation measurements. You also need to have high precision at short response times and interferences must be minimal or only provide a constant offset. We therefore deleted the statement concerning flux measurements from the revised paper.

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