

***Interactive comment on “Real-time analysis of  $\delta^{13}\text{C}$ - and  $\delta\text{D-CH}_4$  in ambient air with laser spectroscopy: method development and first intercomparison results” by S. Eyer et al.***

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This is a very interesting and generally well written article. I have only a few comments and questions.

In the interest of improved readability, in the abstract (last sentence of paragraph 1) the per-mille symbol should also accompany the "0.1". In the 1st sentence of paragraph 2, "replicate" should be replaced by "repeated". The former is strictly correct but the latter

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is plainer English.

In section 2.1.2, paragraph 4; the sentence beginning "Therefore, we decided for a compact Stirling ..." is a bit obscure in its meaning. Specifically, how are you gaining in terms of size, weight and performance? What is this to be compared to?

I would suggest that the narrative in section 2.1.3 be supported by a figure similar to Fig 4. which sets out the various time intervals and their relationships.

In section 2.2.2 the provenance of this number  $1955.3 \pm 6.8$  ppb should be given. Since this is used as a standard it is important to tell the reader how this was obtained.

In section 3.1, I found the titles of the subsections confusing. In section 3.1.1 one presumes that TREX was used, yet the heading for section 3.1.2 would imply that it wasn't.

In section 3.3, do you mean by "more stable boundary conditions" that a night-time inversion formed in the atmospheric boundary layer (to cap the upward movement of CH<sub>4</sub>)?

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