

## ***Interactive comment on “Assessment of recent advances in measurement techniques for atmospheric carbon dioxide and methane observations” by Christoph Zellweger et al.***

**Anonymous Referee #2**

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This paper compares historic, established techniques for measuring atmospheric methane and carbon dioxide (GC/FID and NDIR) with a suite of spectroscopic techniques (in particular cavity ringdown spectroscopy (CRDS)), rapidly being taken up by researchers measuring greenhouse gases. The work assesses the suitability of the new methods for delivering a seamless continuation of the CO<sub>2</sub> & CH<sub>4</sub> timeseries within the WMO/GAW network. Through a series of extensive ‘audits’ (intercomparisons between instruments) at four sites, along with a set of measurements of circulating standards, the authors conclude that spectroscopic techniques are not only suitable for replacing traditional methods, but in fact offer a considerable improvement over traditional methods, improving accuracy and reducing bias.

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This paper describes some and interesting and highly relevant work for the atmospheric greenhouse gas measurement community and the reviewer recommends publication in AMT.

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