

Interactive comment on “Long-term continuous atmospheric CO₂ measurements at Baring Head, New Zealand” by G. W. Brailsford et al.

Anonymous Referee #2

Received and published: 22 October 2012

General comments

This paper is a site description paper presenting the CO₂ monitoring at the Baring Head site in New Zealand, along with the 39 years of CO₂ measurements obtained there. The paper presents the performance of the station in intercomparison tests (flasks, round robin) over more than 30 years. The paper is compact, informative and useful. It builds upon a suite of in-house technical reports since the start of the site. It can be a little frustrating for the reader to be systematically referred to these reports (especially in Sect. 3). The paper is well written, and is very relevant to this Special issue of AMT.

Specific comments

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Section 2. The air masses' origin (mentioned line 9 with reference to Stephens et al. in a paper in preparation) would be very useful to show for the reader in this site description paper (likely without creating problems for the companion paper.) Is it obtained from back trajectories?

Line 14-15; I suggest to move the part of this sentence after the coma (...and observations...) about WMO scale to Section 3.

Sect. 3.5 line 4 “each instrument change involved rigorous comparison...”: Is that document in any of the report referenced?

Sect 3.5. Last paragraph on reports: please provide a mapping of the topic for each report.

Sect. 4. P. 5897 line 3-4: how are the 2h and the double measurement of each gas been determined to be useful? Where there alternatives? Is this specific to this site?

Sect. 4. End of section: what is the impact of the correction applied?

p. 5899 l. 14: the authors could give quantitative estimates about the errors line 16: How is the drift value obtained? How “typical” is it? Line 24: I suggest that the authors add a new section starting here on “Data selection”

Page 5900 line 4: “trend”: please change the wording, e.g. to “increase or decrease”, “slowly vary”...

p. 5900 line 11-12: What is the percentage of data excluded? Fig .3. Please also show the rest of the data (out of the criteria, see p. 5900 line 12), maybe in shade of light grey.

p. 5900 line 24: Please add reference to Fig. 4 after “independent comparison to the continuous analyser” as this would make sense for the reader. p. 5901 l. 1: it would be interesting to see also the results from these key CO₂ isotopes measurements made at NOAA in regard of the CO₂ plot. Could the authors add (with minor effort) a figure

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and its associated description in the paper, or at least provide reference to WDCGG for the reader to look at these data?

Line 9: Do the authors have any initial result that could be shown here for the assessment of the Picarro vs Siemens NDIR?

Table 1. Caption: please remind here the acronym CCL for the central calibration laboratory. Please provide subtitles for the ppm columns (e.g. low, middle, high)

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 5889, 2012.