

Interactive comment on “Continuous measurements of greenhouse gases and atmospheric oxygen at the Namib Desert Atmospheric Observatory” by E. J. Morgan et al.

D. Lowry (Referee)

d.lowry@es.rhul.ac.uk

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General Comments

The manuscript is generally well-written and highlights the difficulties encountered setting up and maintaining an atmospheric measurement station in a remote environment and the necessities to simplify or remove procedures such as drying that would be commonplace at an easily accessible location. It is well within the scientific scope of AMT and ticks all the relevant boxes.

I have just two general points. The manuscript is fine for technically-minded laboratory

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scientists, but it needs to entice a wider audience into the usefulness of the data from this site. It mentions that the site is representative of ocean and terrestrial background, but I would include a site footprint (possibly seasonal) / location map to give this more impact, and perhaps some context by marking other stations in the region such as Cape Point or Ascension Island.

The second is that there is too much general text on the instruments that seems to be derived straight from the manual. I would cut this down and refer directly to the source reference. There is a large amount of detail on data correction for O₂/N₂, but not for the other instruments. I would try to balance this a little better.

Detailed Comments

Line 94 – ‘The the’

Lines 135-140 – Not all necessary (see general comments)

Line 231 – The ‘it’ is not correct

Line 243 – Please clarify the analysis method for isotopes. Presume IRMS but not mentioned

Line 246 – ‘water droplet method’ – please include a reference for this technique

Line 298 – I would indicate here that the water vapour correction is discussed later, because it comes across as though it should be at this point

Line 330 – last 5 minutes of the working standards were used. How long is the stabilization time, how does it vary between gas species.

Line 538 – The flask time-series sentence is not a sentence. Please correct.

Line 550 – If there is such a difference between air masses at NDAO and NOAA sites then how can either site be taken as representative for the area. I think that this sentence is badly phrased. The NOAA site will miss the diurnal variations though.

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Reference list – Dlugokencky et al. is only half of a reference.

Fig.5 – Caption needs more development and information. Please indicate on the figure where the target gas was changed.

Fig 7 caption – not just the working tank and only CO shown, so need to correct the caption.

Fig 11 – The 1 hour averages have so much variation and the points are so close together that it is not clear what is being shown. Daily averages might be clearer and will at least cut out the diurnal variation. Figure 10 might also be more informative shown as daily averages. Yes it will reduce the methane peaks, but they will appear relative to a well-defined baseline.

Tables 3 and 4 captions need a little more explanation. For example where can we find the equations used to create these figures in the text.

Table 4 caption – these are biases relative to what? Please clarify.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 1511, 2015.