

## ***Interactive comment on* “The Total Carbon Column Observing Network Site Description for Lauder, New Zealand” by David F. Pollard et al.**

### **Anonymous Referee #2**

Received and published: 3 October 2017

The paper “The Total Carbon Column Observing Network Site Description for Lauder, New Zealand” describes an important data set related to the abundance of the greenhouse gases in the atmosphere. The paper has enough details to understand the properties of the dataset and can be published with the minor adjustments. The main issue with the paper is a saturation with abbreviation. Some sentences contain up to five abbreviation, which makes it very difficult to follow. I would highly recommend to check the text and remove abbreviations where possible. There are some other changes/clarifications required: p.1, l.4 – “masl” better to write m a.s.l. p.1, l. 20 – “are causing modification of the climate system” – greenhouse gases have an impact on radiation budget, rather than modify climate system

p.2, l.7 - “masl” better to write m a.s.l.

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p.2, l.11 – opening bracket is missing in front of Sherlock et al.

p.3, l. 7-8 – this sentence is not appropriate here as you do not discuss gases but rather networks (“Other greenhouse gas measurements made at the site are summarised in Sect. 3.4.”)

p.3, l. 21-22 – this sentence should be in the section related to data, not to instrument description (“Data for the period from 20th June 2004 to 28th February 2010 were submitted to the TCCON archive.”)

p.5, l. 23-24 – did you try other re-analysis? Why NCEP was chosen? What is a spatial resolution of the re-analysis product?

p.5, l.25 -27 – do you refer to Chemistry Transport Model? If so, which one.

p.6, eq. 2- where does X(H<sub>2</sub>O) comes from?

p.6, l.25 – please spell out SZA. How is this variable reflected in the final dataset?

p.7, l. 8 – spell out LSE

p.8, l 26 – space is missing between “error” and “e.g.”

p. 21 – please clarify what is meant with “standard error”

p.26 – I do not think that data for 21 and 24/10/2013 should be excluded from the archive as they can be useful for other than climate studies applications. It would be better to have them included but properly flagged.

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