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Interactive comment on “Analysis of CO₂ mole fraction data: first evidence of large-scale changes in CO₂ uptake at high northern latitudes” by J. M. Barlow et al.

Anonymous Referee #1

Received and published: 8 April 2015

Barlow et al. present an atmospheric CO₂ time-series data analysis focussing on Northern hemisphere high latitudes. They use wavelet analysis for this purpose. They focus on changes in characteristics of the seasonal drawdown - release characteristics. They find evidence for increases in carbon uptake during summer. The paper is interesting and the approach seems sound. As such I recommend publication of the study.

Minor issues

I found it difficult to understand what the NDVI data really tell us. You seem to say

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that they contradict to some extent the analysis based on atmospheric CO₂ records. Maybe I misread your paper in this regard but if not can you clarify this ?

Formulations are sometimes not sufficiently precise - I would clarify the text in these places - see annotated manuscript.

For me there are too many abbreviations - which one needs to look up repeatedly - and thus break the flow for the reader. Maybe remove one or two ?

Do you really need that many figures? why not retain just the key ones?

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/15/C1436/2015/acpd-15-C1436-2015-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 7089, 2015.

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