Biogeosciences Discuss.,
doi:10.5194/bg-2016-89-SC1, 2016

Biogeosciences Discussions
Open Access
EGU

Interactive comment on "Leaf nitrogen from first principles: field evidence for adaptive variation with climate" *by* Ning Dong et al.

M. G. De Kauwe

mdekauwe@gmail.com

Received and published: 15 April 2016

I found this paper very interesting, but did have two quick suggestions:

1. The authors write:

"For example, any modelling approach that predicts photosynthetic capacity from Narea, and Narea in turn from soil inorganic N supply (Luo et al. 2004), is incompatible with the hypothesis that photosynthetic capacity is optimized at the leaf level as a function of irradiance, leaf internal CO2 concentration (ci) and temperature (Haxeltine and Prentice 1996, Dewar 1996) – as assumed in the widely used LPJ DGVM (Sitch et al. 2003) and other models derived from it, including LPJ GUESS (Smith et al. 2001) and LPX (Prentice et al. 2011a; Stocker et al. 2013)."

Printer-friendly version

Discussion paper

I wonder if this could be explained a little further? I think it is an important point, but don't feel that it is immediately self evident why these hypotheses cannot co-exist, i.e. that a canopy can optimise for leaf N, but be constrained by supply from the soil inorganic N, e.g. McMurtrie et al. 2008, Functional Plant Biology, 2008, 35, 521-534. I think it

2. Fig 1:

Remove the labels from the points and increase their size. Currently you cannot see the colour variation very easily.

Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-89, 2016.

Printer-friendly version

Discussion paper