

Supplement of Atmos. Chem. Phys., 16, 9047–9066, 2016  
<http://www.atmos-chem-phys.net/16/9047/2016/>  
doi:10.5194/acp-16-9047-2016-supplement  
© Author(s) 2016. CC Attribution 3.0 License.



Atmospheric  
Chemistry  
and Physics  
Open Access  
EGU

*Supplement of*

## **Increasing summer net CO<sub>2</sub> uptake in high northern ecosystems inferred from atmospheric inversions and comparisons to remote-sensing NDVI**

**Lisa R. Welp et al.**

*Correspondence to:* Lisa R. Welp (lwelp@purdue.edu)

The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.

**Supplemental figures for: Increasing summer net CO<sub>2</sub> uptake in high northern ecosystems inferred from atmospheric inversions and remote sensing, by Welp et al.**

**Figure captions**

**Figure S1:** Time series of fossil fuel fluxes that are subtracted from the inversion results in order to calculate the land biosphere exchange for the (a) globe, (b) European region and (c) Boreal North America and Boreal Asia. Black is the RIGC inversion and grey is the Jena s85 inversion.

**Figure S2:** Correlation coefficients for July CO<sub>2</sub> fluxes from the arctic zone with lagged 3-month running mean temperature (area-weighted and NPP-weighted) and NDVI for (a) RIGC inversion and (b) Jena s85 inversion over the current and previous 4 years. Positive correlations mean greater NDVI during (or following) warmer temperature. Filled circles indicate significance greater than the 95% level.

**Figure S3:** Mean seasonal cycle of biomass burning CO<sub>2</sub> emissions in the (a) arctic zone and (b) boreal zone. Units are in Tg C mon<sup>-1</sup>. Blue line is the RETRO dataset from 1985-2000 and magenta in the GFED4 dataset from 1997–2012.

**Figure S4:** Time series of biomass burning CO<sub>2</sub> emissions from RETRO and GFED4 for both regions as annual sums (a and b) and for the month of July only (c and d).

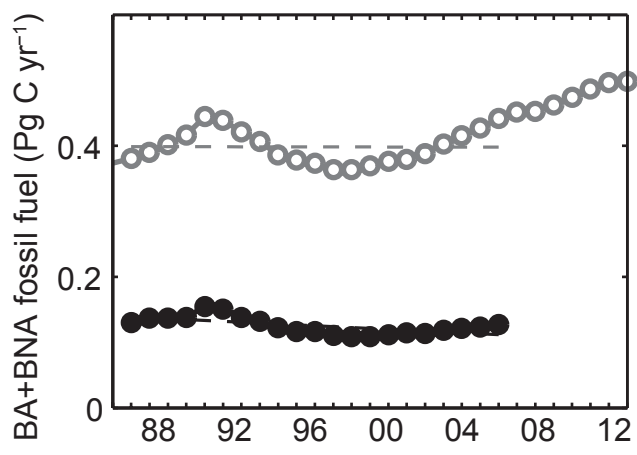
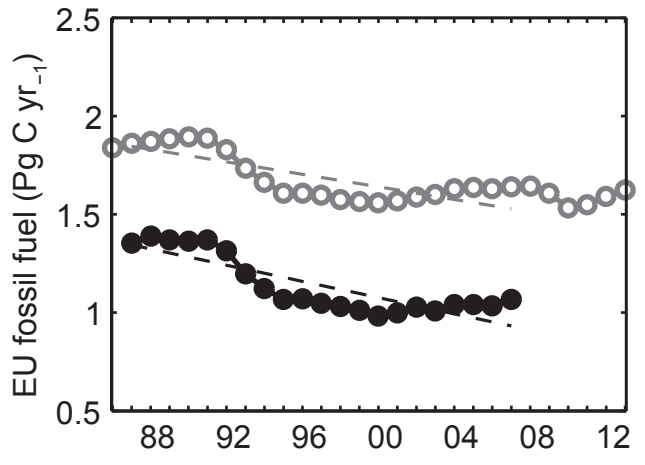
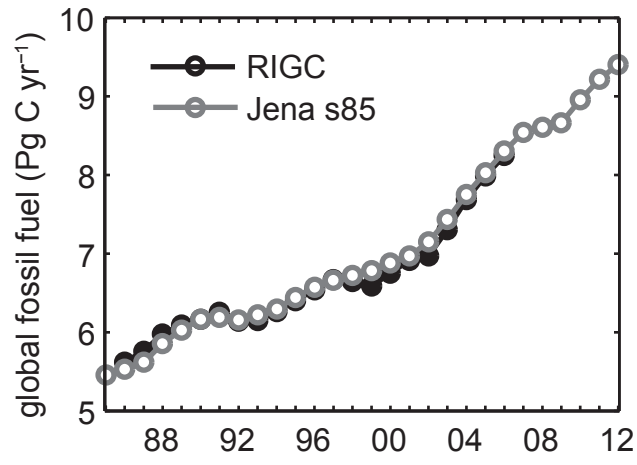


Figure S1

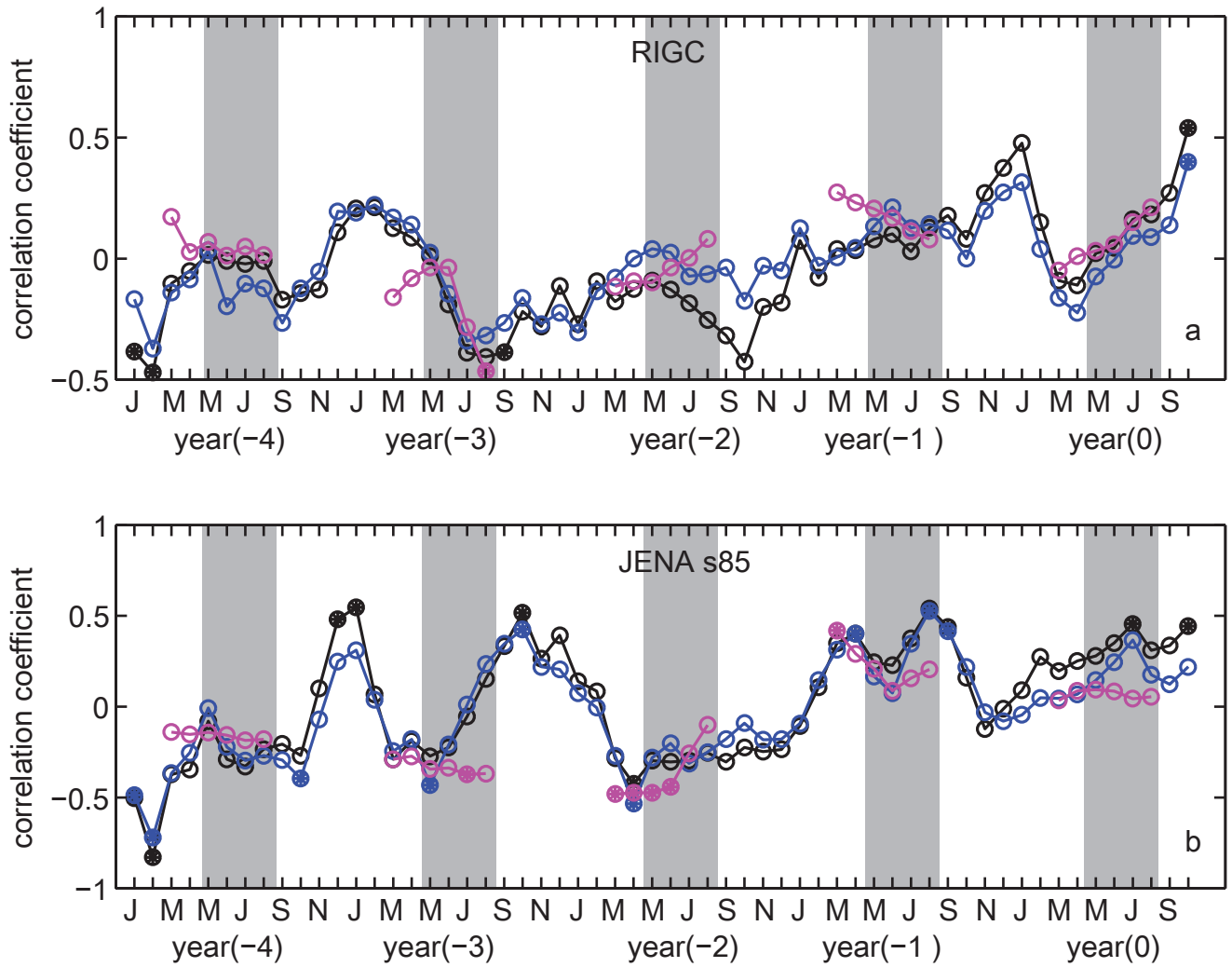
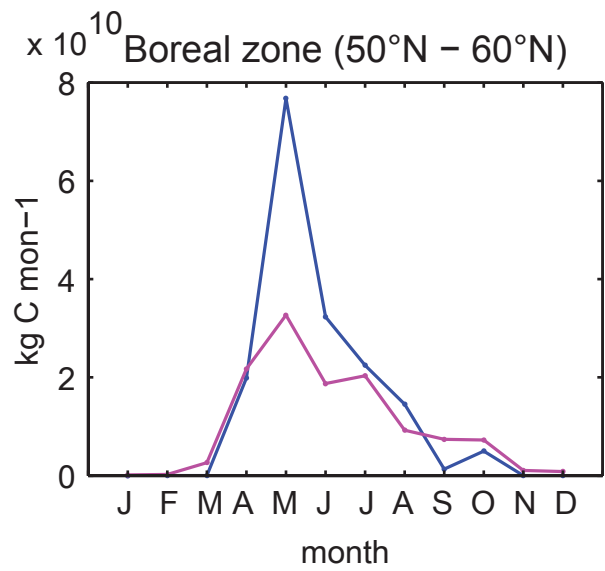
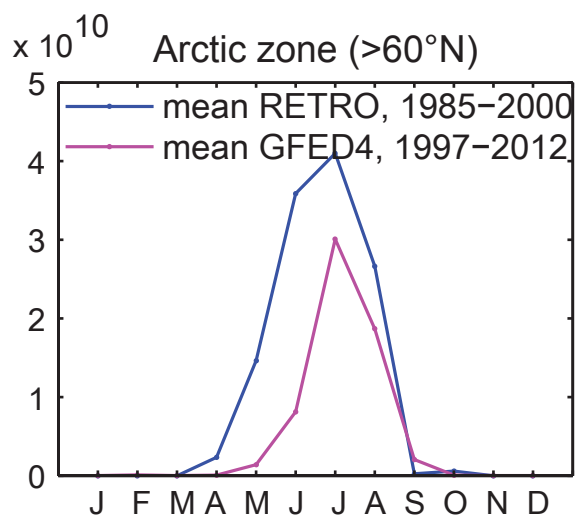


Figure S2



**Figure S3**

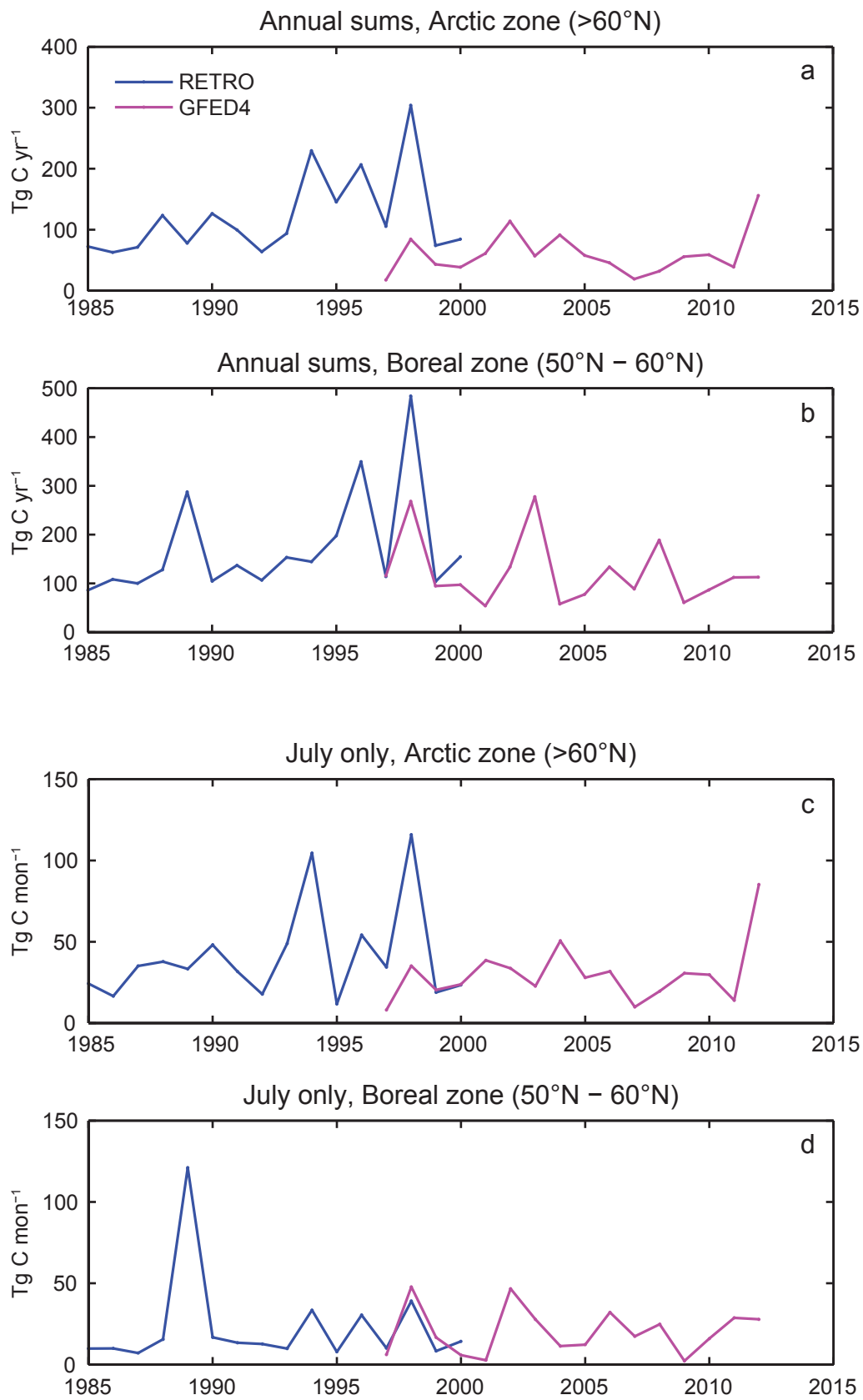


Figure S4