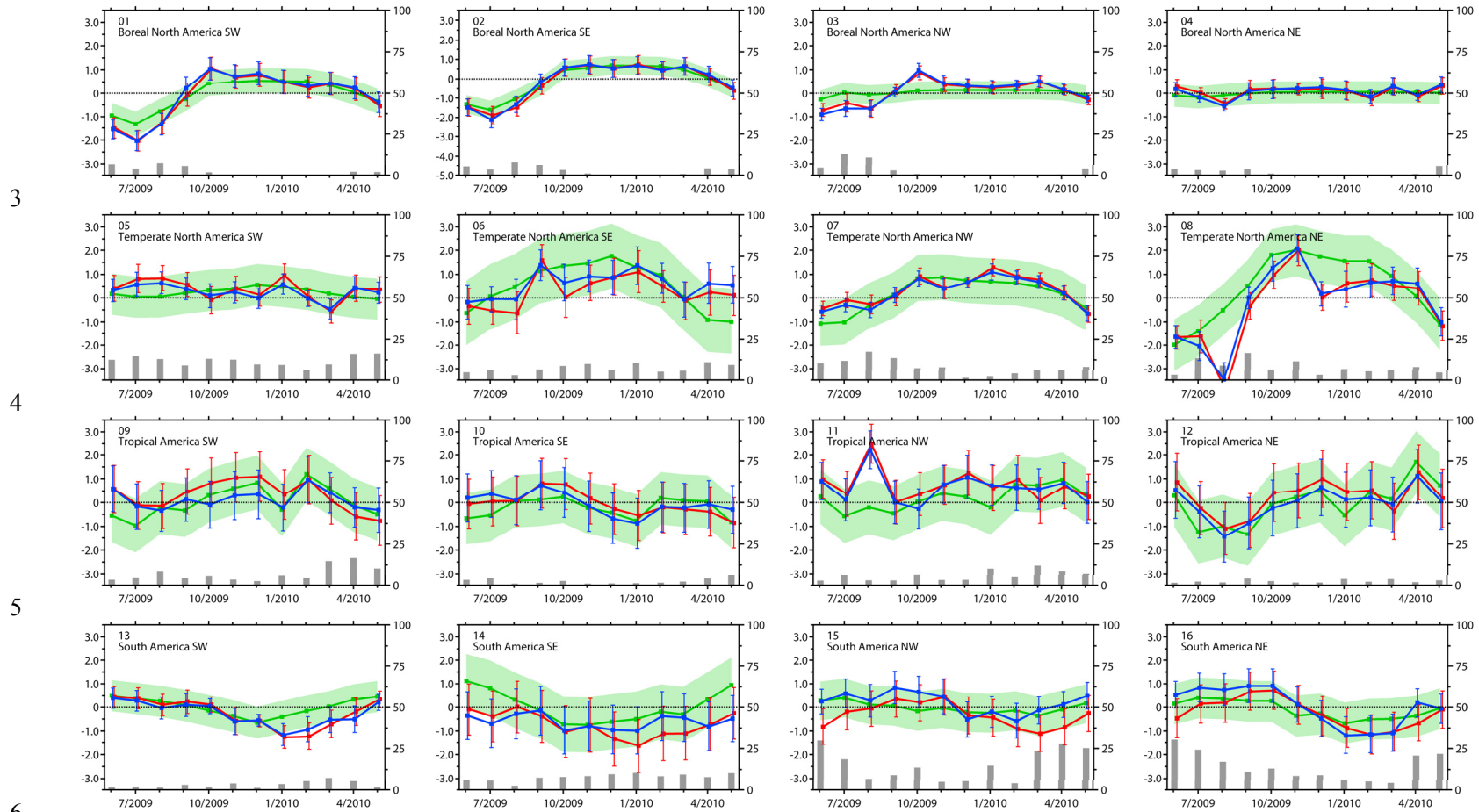
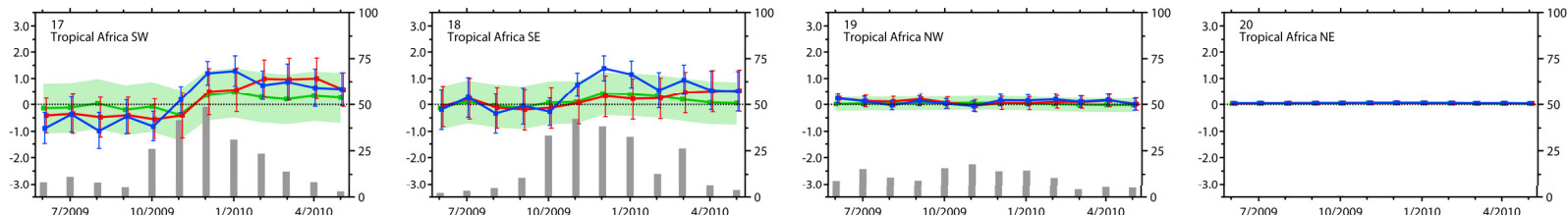


1 Supplementary material for paper by S. Maksyutov et al “Regional CO₂ flux estimates for 2009–2010 based on GOSAT and ground-based CO₂
2 observations”

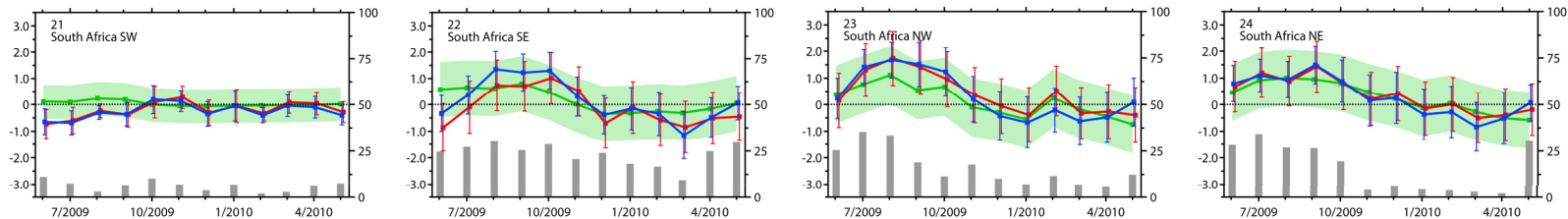


7 Figure S1. Time series of regionally averaged fluxes ($\text{gC/m}^2/\text{day}$) for June 2009 to May 2010, for quadrants (left to right: SW, SE, NW, NE) in the
8 (top to bottom) boreal North America, temperate North America, Tropical America, and South America subcontinental regions. The graphs show
9 prior fluxes (green lines), estimated fluxes using GV data (red lines), and estimated fluxes using GV and GOSAT data (blue lines). The error bars
10 show flux uncertainties. The gray bars represent the percent reduction in the uncertainty (scale on right side of graphs).

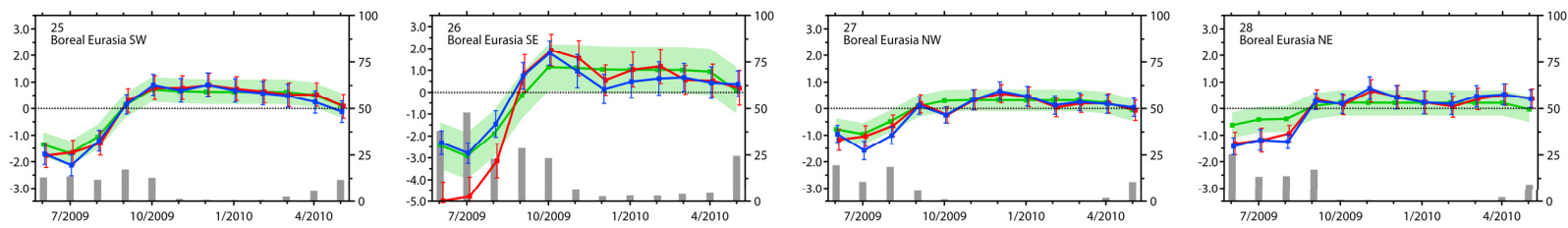
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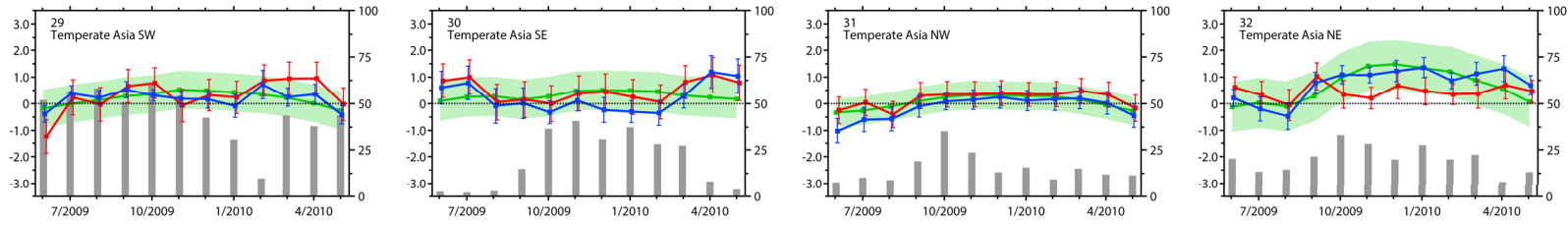
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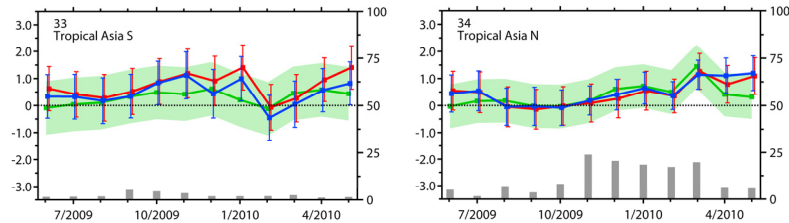


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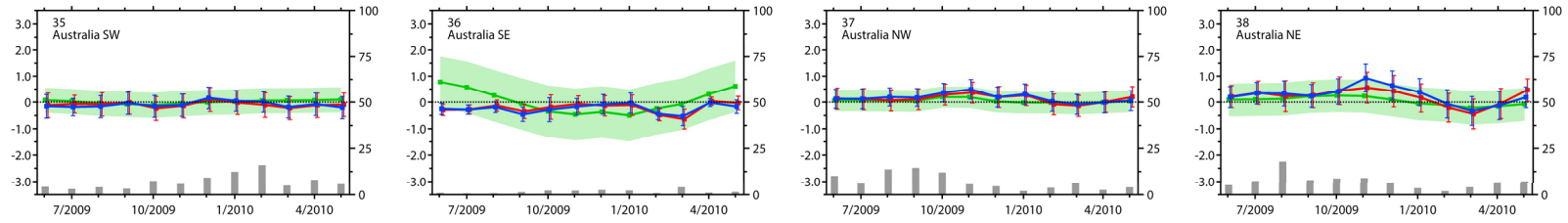


15 Figure S2. Time series of regionally averaged fluxes (gC/m²/day) for June 2009 to May 2010, for quadrants (left to right: SW, SE, NW, NE) in the
16 (top to bottom) Tropical Africa, South Africa, Boreal Asia, Temperate Asia subcontinental regions. The graphs show prior fluxes (green lines),
17 estimated fluxes using GV data (red lines), and estimated fluxes using GV and GOSAT data (blue lines). The error bars show flux uncertainties.
18 The gray bars represent the percent reduction in the uncertainty (scale on right side of graphs).

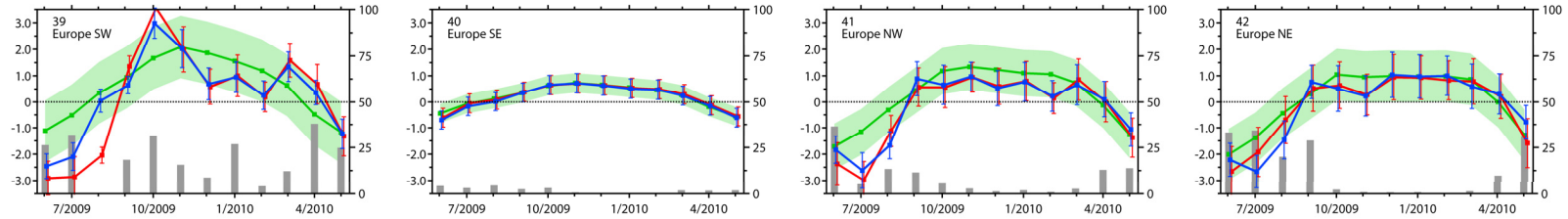
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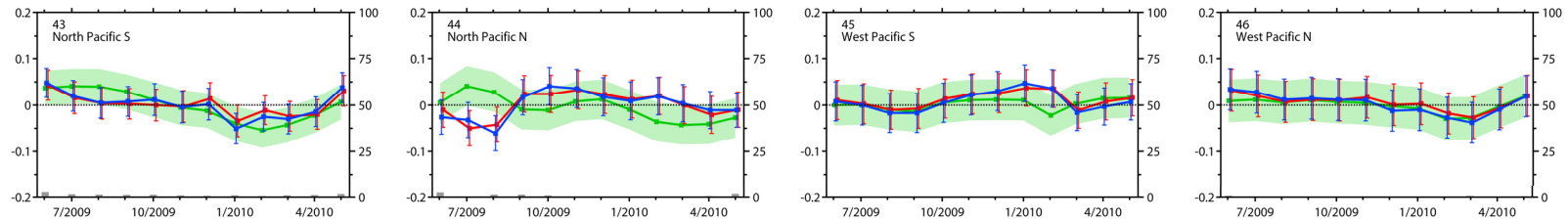


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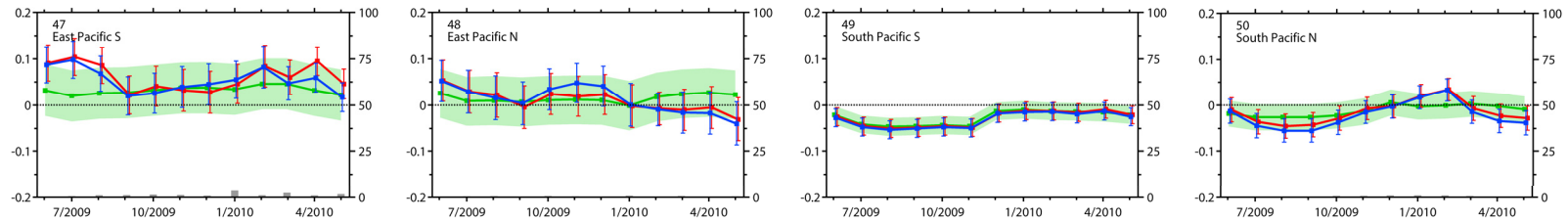


22 Figure S3. Flux time series for June 2009-May 2010, for Tropical Asia, Australasia and Europe Time series of regionally averaged fluxes
23 ($\text{gC}/\text{m}^2/\text{day}$) for June 2009 to May 2010, for sub-region pair (North and South) of Tropical Asia (top left), and quadrants (left to right: SW, SE,
24 NW, NE) in the Australasia(middle) and Europe(bottom) subcontinental regions. The graphs show prior fluxes (green lines), estimated fluxes
25 using GV data (red lines), and estimated fluxes using GV and GOSAT data (blue lines). The error bars show flux uncertainties. The gray bars
26 represent the percent reduction in the uncertainty (scale on right side of graphs).

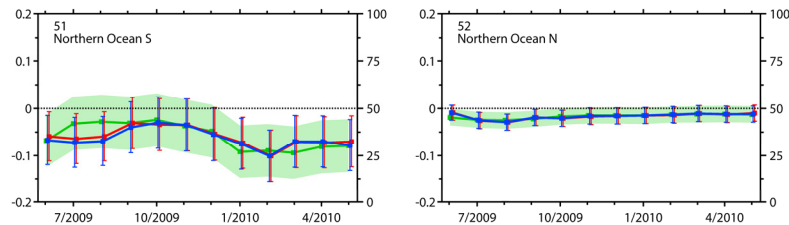
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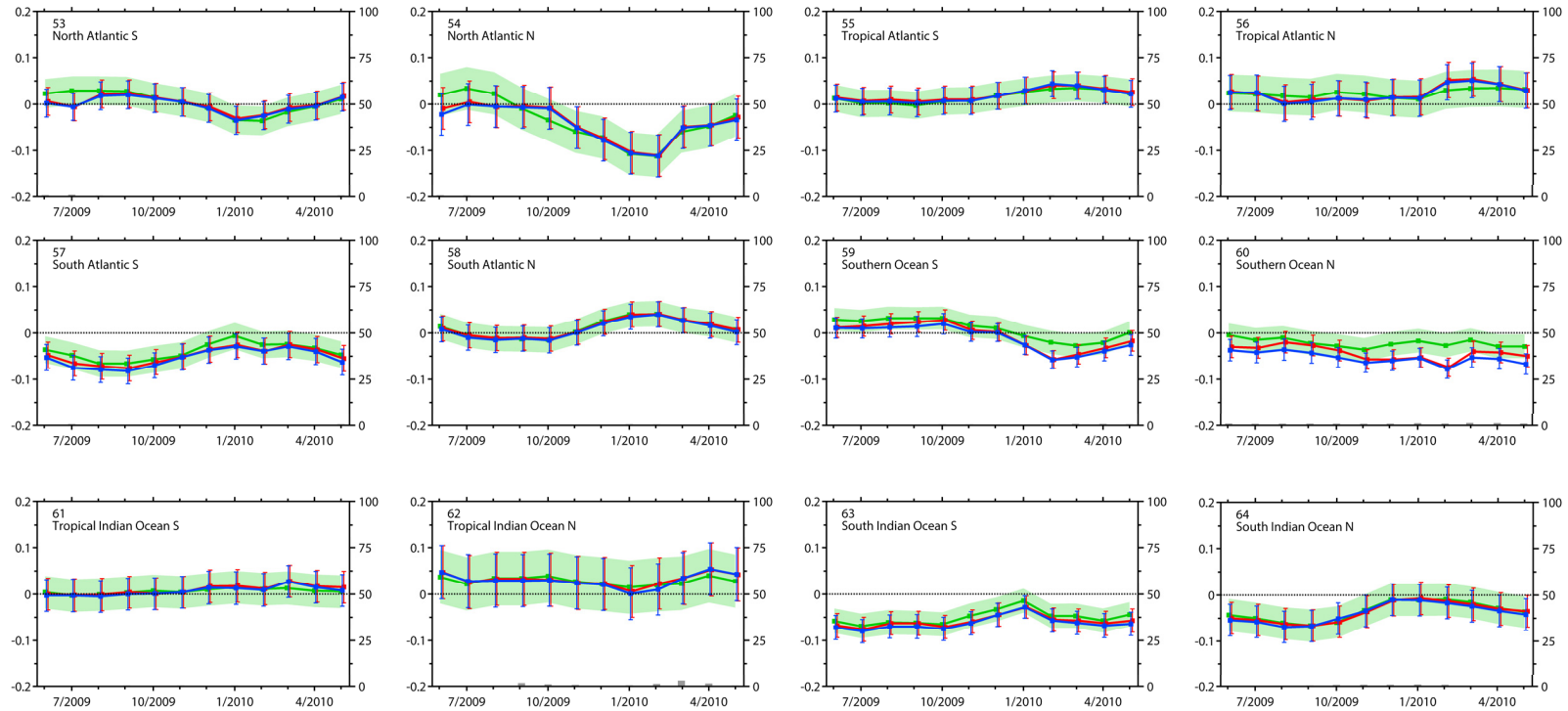


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30 Figure S4. Time series of regionally averaged fluxes ($\text{gC}/\text{m}^2/\text{day}$) for June 2009 to May 2010, for sub-regions (North and South) pairs of North
 31 Pacific Ocean (top left), West Pacific (top right), East Northern Ocean (middle left), South Pacific Ocean (middle right), Northern Ocean (bottom
 32 left) oceanic regions. The graphs show prior fluxes (green lines), estimated fluxes using GV data (red lines), and estimated fluxes using GV and
 33 GOSAT data (blue lines). The error bars show flux uncertainties. The gray bars represent the percent reduction in the uncertainty (scale on right
 34 side of graphs).

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39 Figure S5. Flux time series for June 2009- May 2010, for Atlantic Ocean, Southern Ocean, Indian Ocean. Time series of regionally averaged
40 fluxes ($\text{gC}/\text{m}^2/\text{day}$) for June 2009 to May 2010, for sub-regions (North and South) of North Atlantic Ocean (top left), Tropical Atlantic Ocean (top
41 right), South Atlantic Ocean (middle left), Southern Ocean (middle right), Tropical Indian Ocean (bottom left), South Indian Ocean (bottom right)
42 oceanic regions. The graphs show prior fluxes (green lines), estimated fluxes using GV data (red lines), and estimated fluxes using GV and
43 GOSAT data (blue lines). The error bars show flux uncertainties. The gray bars represent the percent reduction in the uncertainty (scale on right
44 side of graphs).

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