

## North American CO<sub>2</sub> Fluxes from CarbonTracker Compared with a New Synthesis of Inverse Models

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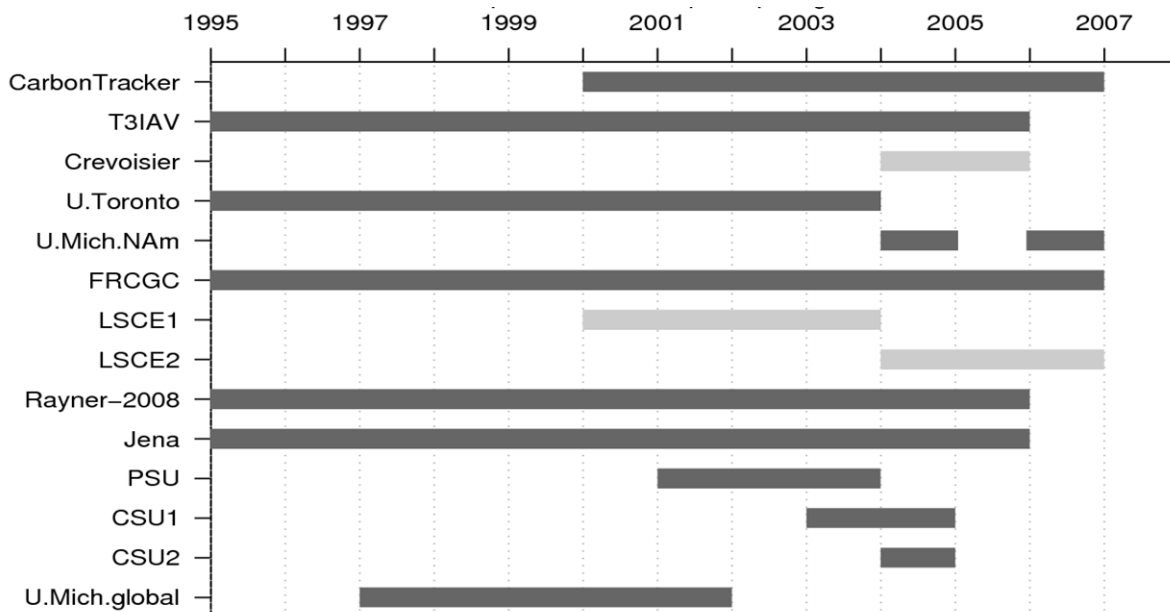
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Inverse models of carbon dioxide exchange from terrestrial ecosystems tend to estimate much more interannual variability (IAV) in CO<sub>2</sub> flux than forward, or bottom-up, models. For instance, the bottom-up model used in CarbonTracker (CASA-GFED2 of van der Werf *et al.*, 2006), predicts a peak-to-peak IAV of 0.2 PgC/yr for North America over the period 2000-2005, whereas after optimizing to agree with atmospheric CO<sub>2</sub> observations, CarbonTracker finds about four times more IAV. The peak-to-peak variability of 0.8 PgC/yr in North American flux from CarbonTracker is in fact as large as its estimate of the long-term mean uptake over the same region (-0.8 PgC/yr). In part to investigate this difference, the North American Carbon Program is organizing a synthesis report to compare inverse and forward models' estimates of North American CO<sub>2</sub> exchange over the period 2000-2005. We will report here on early results from this effort, focusing on a collection of inversion flux estimates from diverse modeling groups around the world.



**Figure 1.** Temporal domains of inverse models participating in the NACP interim synthesis project (light gray bars represent provisional estimates).