Fluxcourse Basics - Tans Fung and Takahashi 1900 Science 247: 1431-1438

What atmospheric observations were used in this paper? What were their limitations?

What Oceanic Observations and CO_2 Flux estimates were available in 1990?

Describe the transport modeling used with surface sources and sinks. How does it compare with today's Global Circulation Models used in the last IPCC?

Testing some current views on the carbon budget – the models were tested against the latitudinal gradient of the CO2 concentration observations. Which model was most parsimonious? What does that tell us about the likely location of the CO2 sources and sinks?

Does this specific analysis inform us about how important the CO2 fertilization effect is? How does it do this?

Adjustment of Oceanic uptake to Terrestrial Scenarios & Adjustment of terrestrial exchange to Observed ΔpCO_2

The authors do some mathematical experiments to adjust either the ocean uptake or the terrestrial uptake to match the latitudinal gradient of the atmospheric CO2 concentration. Why do they do this? What do they learn from this?

In 1990, there was no FLUXNET and very few observations of CO2 from aircraft. How could these new observations be used to help us estimate where the carbon sources and sinks are?