

**COMPARING THE LONG-TERM MEANS AND BIOGEOCHEMICAL INTERPRETATION OF
INTERANNUAL CARBON EXCHANGE FROM THE TRANSCOM 3 INVERSE
CALCULATIONS**

K.R. Gurney

TransCom 3 Modelers

ABSTRACT

This presentation will interpret results from the TransCom 3 interannual time dependent inversion. First, the long-term mean carbon exchange will be compared across the three different TransCom 3 inversion levels: the annual mean, seasonal, and interannual control experiments. We will highlight the agreement among these experiments in spite of the differing degrees of freedom, and the differing CO₂ observing networks employed. Comparison will be made to independent decadal estimates of land and ocean carbon uptake and will include the sensitivity to different CO₂ networks. We will also interpret the model mean interannual carbon fluxes as they relate to key indices of climate variability. In particular, correlation to the El Niño/Southern Oscillation index will be made suggesting a propagation carbon flux anomalies from the tropics to the extra tropics following the peak of the ENSO warm phase in the tropical Pacific ocean. These correlations will be explained via anomalies in temperature and precipitation from NCEP reanalysis.