

## The Annual Climatology of the CO<sub>2</sub> Profiles over North America Derived from the NOAA ESRL Aircraft Network

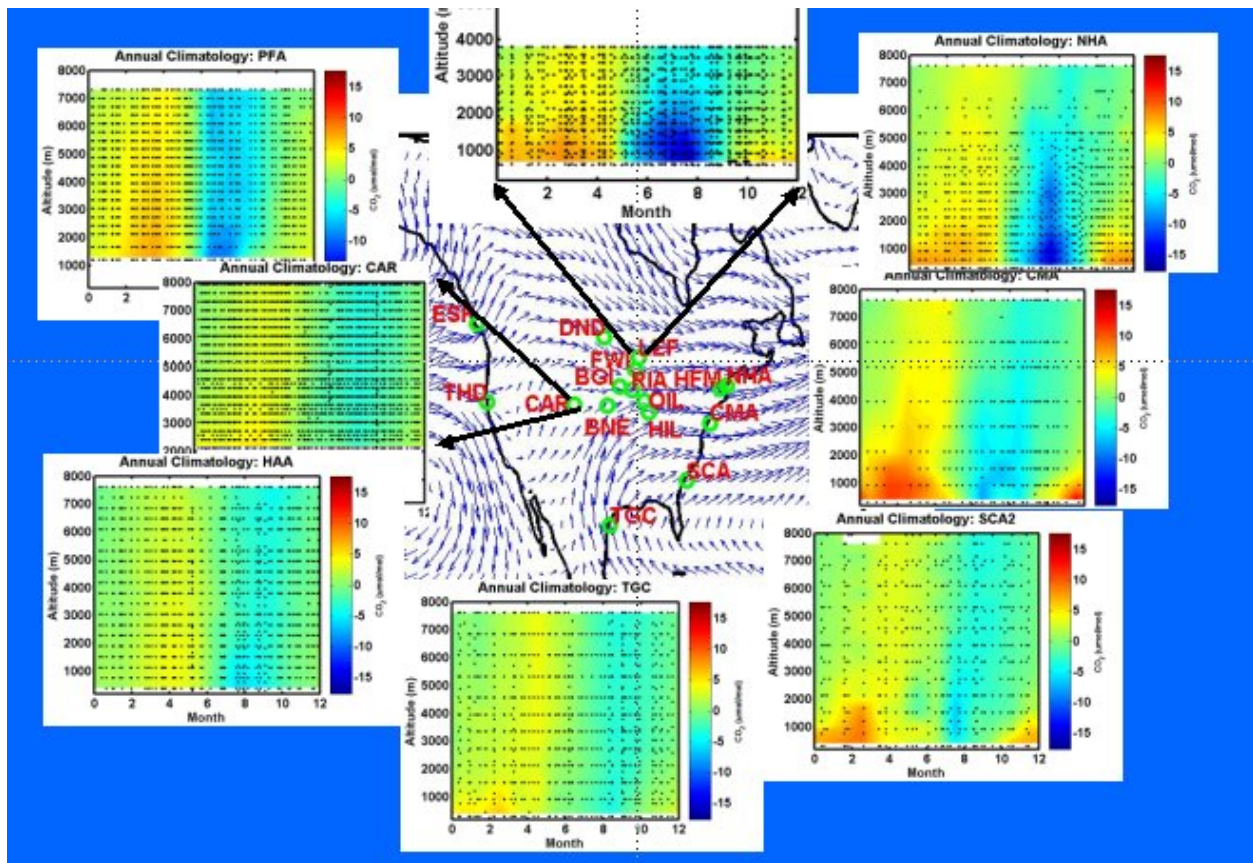
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Using vertical profile data from observations made at 19 aircraft sites over the last 12 years, we have produced an estimate of CO<sub>2</sub> mixing ratios over one climatological year to understand the seasonal variability of CO<sub>2</sub> over continental North America. The climatology provides the information necessary to make a model-independent estimate of surface CO<sub>2</sub> fluxes over continental North America. Using a geostatistical interpolation technique called Kriging, we have mapped the climatologies made at each site over continental North America. These are compared directly with results from the NOAA ESRL CarbonTracker results.



**Figure 1.** Annual climatology of CO<sub>2</sub> over North America. Underlying map shows surface wind vectors over North America. Overlying graphs shows the annual climatology of CO<sub>2</sub> at 8 NOAA ESRL Carbon Cycle Group Aircraft Project sites. The annual climatology is constructed using all observations of CO<sub>2</sub> mole/mole mixing ratio at each site corrected to the mean annual increase in CO<sub>2</sub> at Mona Loa, Hawaii relative to July 1, 2004.