

Definite Paper Topics:

Draw-down of CO₂ and OCS (Vay, Blake)

CO₂/CO ratio as a tracer of Asian pollution (Yonghoon Choi)

Top-down emission estimates of CO using MOPITT, AIRS and aircraft measurements. (Turquety, Pfister, Warner)

Top-down emission estimates of NO_x using SCIAMACHY and aircraft measurements. (Martin)

Top-down emission estimates of formaldehyde using SCIAMACHY and aircraft measurements. (Millet)

Regional emissions inventories as compared to observed data (Carmichael)

Formal inversion for CO, NO_x and speciated HCs. (Carmichael)

Source-receptor transport characterization using trajectory models and satellite data (Warner, Pierce).

Non-marine sources of methyl iodide (Blake, Wingenter)

Source variability in CH₄ (Bartlett, Sachse, Blake)

Helpful research tools:

Stratospheric tracer: CH₄, O₃, CFCs, ⁷Be, H₂O, PAN/HNO₃ ratio
(Dibb, Blake, Avery, Sachse, Moody)

Oxalate, acetonitrile and other measured components as biomass
burning tracer (Blake, Dibb?)

MBL tracer: Bromoform, methylene bromide, methyl iodide (Blake)

Tracer specific to power plant emissions: SO_x etc. (Weber? –
keep P3 data in mind)

Source quantification for particulates: biogenic v. anthropogenic,
fossil fuel v. biomass. (Weber, Clarke – given help with flight-leg
categorization from chemical tracers etc.)

Modeled air mass tracers along flight tracks. (Carmichael, Jacobs)

Modeled mixing diagnostics for merged data set (Pierce)

Topics for collaboration:

Lightning as a source of NO_x (make sure to communicate with lightning/convection working group)

NH_4 sources and relation to neutralization of aerosols. (Keep in mind link with P-3)

Observations characterizing pure BB plume and its impacts on BL measurements. (DC8 fast-response instruments may have data – esp 7/18 flight) – Deferred to biomass burning working group

MBL sources: their relative importance in convective and WCB mixture) – Deferred to photochemistry working group.

Source quantification for particulates. - Deferred to aerosol working group. – Provide gas-phase chemical tracers.