Convection, Lightning, and Stratospheric Influence

Convection:

Age of air:

Calculate age since most recent convection based on IR imagery (Pfister).

Effects of lightning and convection on composition of mid to upper troposphere – diagnostics of age of air – NOX perspective (Cohen).

Don Blake – Gaseous tracers of convective uplift during INTEX.

Comparison of techniques – Cohen, Porter, Pfister (Prospective collaboration)

Vertical redistribution:

Influence of convection on the vertical distribution of peroxides and formaldehyde and HOx production(Fried, O'Sullivan, Heikes, and Wennberg, Brune)

OVOC, PANS and nitriles over the continental US during INTEX – Singh

A multiplatform analysis of the North American Reactive nitrogen budget during ICARTT – Hudman

Photochemistry/Aerosol Processes Downwind:

Convective outflow as seen in the box model calculations – paper or contribution to other convective influence papers – Crawford

Ozone maximum over the southern US – anthropogenic, biogenic and lightning influences (Li)

Model analyses – contribution of lightning to North American outflow of NOx, NOy, and ozone – Pickering

Convective Transport Processes:

Comprehensive investigation of warm season CO lofting and transport episodes utilizing in situ measurements, a regional scale chemical transport model, and satellite derived data – (Kiley)

Summertime influence of Asian pollution in the middle and upper troposphere in the US (Jaegle, Liang).

Lightning:

Case study of lightning near Huntsville using a cloud resolving model – Pickering, Porter, Cohen etc

Examination of observed lightning NOx ,observed time since encounter with lightning, and vertical distributions (M. Porter, Fuelberg)

Strat-Trop Exchange:

IONS overview – Thompson

Ozone from Strat Trop Exchange using IONS and meteorological analyses – John Merrill.

Diagnosis of STE from Be-7 (Dibb) **

Regional Scale ozone budgets from RAQMS – Pierce, et al

Case studies of convective transport of ozone into the troposphere – Hitchman, Buker, Pierce