Green Ocean Amazon 2015
(GOAmazon2015)

PI: Scot Martin
With contributions from the GOAmazon team
Location of the campaign
- 111 by 60.8 km represented by this box.
- Wind speeds at 1 km altitude are typically 10 to 30 kph.
- T2→T3 transit time of 2 to 6 hr.
Planned sites and sampling strategy

Contrast:

- The T3 site is situated such that it experiences the extremes of (1) a pristine atmosphere (2) heavy pollution and the interaction of that pollution with the natural environment.

Quasi-lagrangian sampling:

- When wind is from east-northeast, the evolution of aerosol will be characterized as air parcels are successively intercepted by T1, T2, and T3 sites.
Dates of GoAmazon2015

DOE ARM Mobile Facility Operations (T3 ground site)

- 1 January until 31 December 2015

ARM Aerial Facility Operations (aircraft)

- 40 flight days in period of 15 February until 31 March 2015 (Wet season)
- 40 flight days in period of 1 September until 15 October 2015 (Dry season)
NCAR facilities and timeline

Led by Courtney Schumacher and Susan van den Heever

S-Pol radar
Doppler, polarimetric measurements at
• S-band (10 cm, non-attenuating) and
• K_a-band (0.8 cm, heavily attenuating)

2 Integrated Sounding Systems (ISS)
• GAUS radiosonde sounding system
  o 6/day launches
• Wind profiler/RASS
• Surface meteorology

Proposed deployment
• IOP1: Feb/Mar (wet season)
• IOP2: Sep/Oct (transition season)
• Coincides with the G1 deployment
Potential S-Pol and sounding array sites
Comprehensive measurements (one year) of aerosol, cloud, radiation and meteorology, under both pristine and polluted conditions

✓ **Aerosol life cycle**
  - Interaction of Manaus pollution plume with biogenic emissions of volatile organic compounds, especially impact on aerosol formation and evolution
  - Influence of Manaus pollution plume and biomass burning on aerosol microphysical, optical, CCN, and IN properties

✓ **Convective life cycle**
  - Diurnal transition of convection from shallow to deep and the impact of aerosols
  - Evolution of convective intensity from severe storms in dry season to moderate storms in wet season and role of vegetation, aerosols and atmospheric conditions on wet season onset
  - Atmospheric teleconnections between Amazonian convection and the Atlantic with relevance to global model biases in both regions