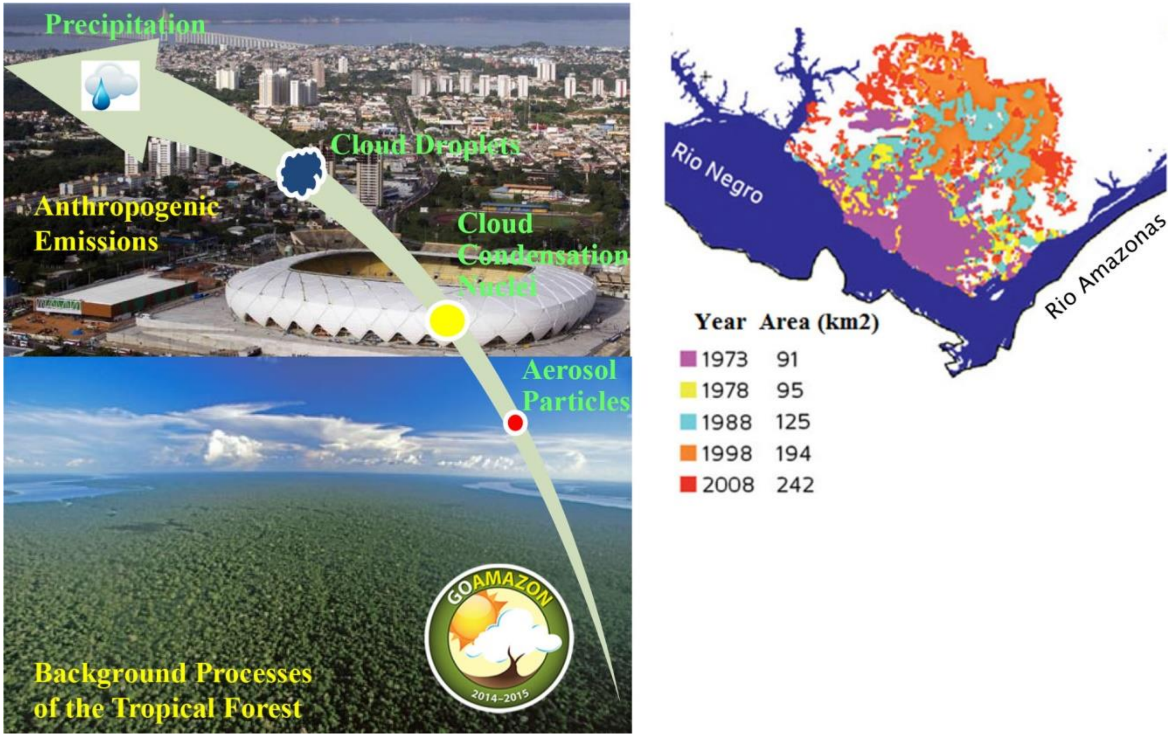
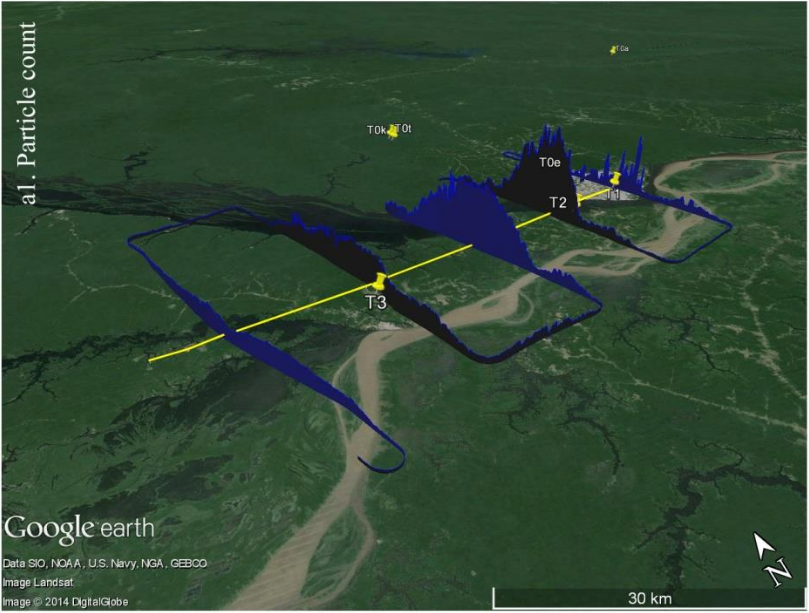


Figure 1. The GoAmazon2014/5 experiment in concept. The left panel represents the advection by wind of a background air mass into Manaus, emissions into this air mass while over the city, and the transformation of atmospheric species as the air mass continues downwind of the urban region. The air mass is laden with biogenic volatile organic carbon compounds (BVOCs) emitted by the forest both upwind and downwind of the city. These BVOCs are transformed by the atmospheric oxidant cycle into aerosol particles. The prevailing chemical reactions are altered by pollution. The particulate matter serves as cloud condensation nuclei (CCN). As a result, cloud properties and possibly rainfall can be modified in response to different levels of pollution over the tropical rain forest. As a surrogate for scaled anthropogenic emissions, the right panel shows the expansion of the urban region of Manaus (-3.1°, -60.0°), Brazil, across four decades. The right-side image is adapted from http://revistapesquisa.fapesp.br/wp-content/uploads/2012/10/078-081_ilhascalor_200.pdf, accessed 11 August 2015.


a1. Particle count
T0a
T0k
T0t
T0e
T2
T1
T3
Google earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
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30 km
N

The Green Ocean Amazon Experiment (GoAmazon2014/5) Observes Pollution Affecting Gases, Aerosols, Clouds, and Rainfall over the Rain Forest

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Atmos. Chem. Phys., 16, 3903-3925, doi:10.5194/acp-16-3903-2016, 2016
Summary

23 Oct 2015
Characterization of a real-time tracer for isoprene epoxydiols-derived secondary organic aerosol (IEPOX-SOA) from aerosol mass spectrometer measurements
W. W. Hu, P. Campuzano-Jost, B. B. Palm, D. A. Day, A. M. Ortega, P. L. Hayes, J. E. Krechmer, Q. Chen, M. Kuwata, Y. J. Liu, S. S. de Sá, K. McKinney, S. T. Martin, M. Hu, S. H. Budisulistiorini, M. Riva, J. D. Surratt, J. M. St. Clair, G. Isaacman-Van Wertz, L. D. Yee, A. H. Goldstein, S. Carbone, J. Brito, P. Artaxo, J. A. de Gouw, A. Koss, A. Wisthaler, T. Mikoviny, T. Karl, L. Kaser, W. Jud, A. Hansel, K. S. Docherty, M. L. Alexander, N. H. Robinson, H. Coe, J. D. Allan, M. R. Canagaratna, F. Paulot, and J. L. Jimenez
Atmos. Chem. Phys., 15, 11807-11833, doi:10.5194/acp-15-11807-2015, 2015

19 Apr 2016
Introduction: Observations and Modeling of the Green Ocean Amazon (GoAmazon2014/5)
S. T. Martin, P. Artaxo, L. A. T. Machado, A. O. Manzi, R. A. F. Souza, C. Schumacher, J. Wang, M. O. Andreae, H. M. J. Barbosa, J. Fan, G. Fisch, A. H. Goldstein, A. Guenther, J. L. Jimenez, U. Pöschl, M. A. Silva Dias, J. N. Smith, and M. Wendisch
Atmos. Chem. Phys., 16, 4785-4797, doi:10.5194/acp-16-4785-2016, 2016
Summary

01 Mar 2017
Sensitivities of Amazonian clouds to aerosols and updraft speed
Micael A. Cecchini, Luiz A. T. Machado, Meinrat O. Andreae, Scot T. Martin, Rachel I. Albrecht, Paulo Artaxo,

MAO DATA SOURCES

NAME	FULL NAME	BROWSE DATA
ACSM	Aerosol Chemical Speciation Monitor	Browse Data
AERI	Atmospheric Emitted Radiance Interferometer	Browse Data
AERINF	AERI Noise Filtered	Browse Data
AETH	Aethalometer	Browse Data
AIP	Aerosol Intensive Properties	Browse Data
AOD	Aerosol Optical Depth, derived from atmospheric extinction of solar irradiance	Browse Data
AOS	Aerosol Observing System	Browse Data
AOSCCNAVG	Aerosol Observing System (AOS): cloud condensation nuclei data, averaged	Browse Data
AOSMET	Meteorological Measurements associated with the Aerosol Observing System	Browse Data
CCN	Cloud Condensation Nuclei Particle Counter	Browse Data
CEIL	Ceilometer	Browse Data
	… Absorption Photometer	Browse Data

LETTER

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Amazon boundary layer aerosol concentration sustained by vertical transport during rainfall

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The nucleation of atmospheric vapours is an important source of new aerosol particles that can subsequently grow to form cloud condensation nuclei in the atmosphere[1]. Most field studies of atmospheric aerosols over continents are influenced by atmospheric vapours of anthropogenic origin (for example, ref. 2) and, in consequence, aerosol processes in pristine, terrestrial environments remain poorly understood. The Amazon rainforest is one of the few continental regions where aerosol particles and their precursors can be studied under near-natural conditions[3–5], but the origin of small aerosol particles that grow into cloud condensation nuclei in

and 5,800 m (above mean sea level) from 13:18 to 14:42 (all times are in UTC) on 7 March 2014. Altitudes of 3,200 m, 4,500 m and 5800 m were within the free troposphere, as indicated by the equivalent potential temperature (θ_e). At 5,800 m, the spectrum was dominated by an Aitken mode of 40 nm diameter. These particles can arise from new particle formation in the outflow of deep convective systems[11–13], in which the particle surface area is low owing to wet scavenging of existing particles and the ambient temperature is low, facilitating the formation of particles of a few nanometres from gas-phase precursors through several potential mechanisms[12,14–18]. Condensational and coagulational