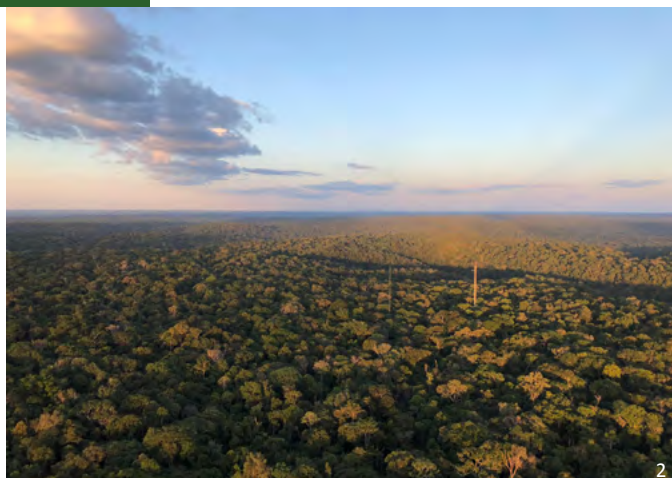




IN THIS ISSUE:

- p. 1: • New Publications
- p. 2: • EGU General Assembly 2019
- p. 3: • Joining the Team
- p. 4: • Community Project
 - Data Portal Updates
- p. 5: • Tall Tower Upgrades
 - Upcoming Events



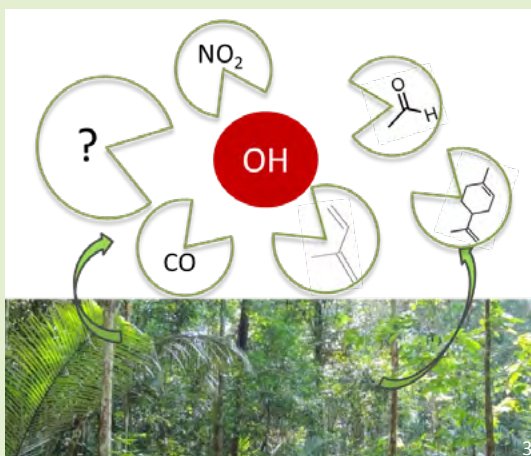
NEW PUBLICATIONS

Peer-reviewed articles published from November 2018 to February 2019



Pfannerstill et al. (2018):
Total OH Reactivity Changes Over the Amazon Rainforest During an El Niño Event, *Front. For. Glob. Change* 1:12[↗]

Wu et al. (2019):
Single-particle characterization of aerosols collected at a remote site in the Amazonian rainforest and an urban site in Manaus, Brazil, *Atmos. Chem. Phys.*, 19[↗]



How Amazonian plants react to ecological stresses, such as heat and drought, and if they release more VOCs in such a situation, is an important question in the face of climate change. To shed light on this, Eva Pfannerstill and her team compared two contrasting years. While overall emissions were pretty much the same, they showed differences in the diurnal distribution. In November 2015, a pronounced El Niño year, most VOCs were emitted during the sunset hour. However, the highest emissions in November of 2012, a „normal“ year, were recorded at noon. This may be attributed to turbulent winds associated with the high temperatures. These transport the VOCs higher, above the forest canopy.



Identifying aerosols and their chemical composition can help us understand where they come from and to what extent certain regions are affected by air pollution. To look into Amazonian air pollution Li Wu and co-authors collected and analyzed aerosols in the city of Manaus and the ATTO site during the wet season. Then ATTO is mainly influenced by air masses from the Atlantic and is located upwind from Manaus. They found that aerosols collected at ATTO are mostly of organic origin, emitted by the forest itself, with additional aerosols comprised of mineral dust and sea-salt particles. In contrast, aerosol samples in Manaus frequently included soot, fly ash and particles containing heavy metals. These are most likely produced by human activities.

EGU GENERAL ASSEMBLY 2019

„Intact Amazon“ session, ATTO presentations and ATTO project meeting



At this year’s EGU Jošt Lavrič, Beto Quesada, Alessandro Araújo and Matthias Sörgel are chairing a session titled „Intact Amazon forest - a natural laboratory of global significance“. **It will take place on Friday, 12 April, with poster presentations from 8:30 to 10:15 am and oral presentations from 10:45 am to 12:30 pm.**

We’re excited that, in addition to many of our ATTO team members, scientists from a variety of other projects will participate in the session. It is going to be a very diverse and exciting, with lots of possibilities to share knowledge and extend our network.



Here is an overview of ATTO presentations in the session (check the session program for all presentations):

Artaxo: Long term measurements of physical and chemical properties of biogenic atmospheric aerosols at the ATTO tower, Central Amazonia. [†]

Assis: Sensitivity of Ball-Berry stomatal conductance model parameters to leaf age in the upper canopy of a central Amazon forest. [†]

Barbosa: Microclimatic and ecophysiological conditions experienced by epiphytic bryophytes in an Amazonian rainforest. [†]

Botia: Understanding Nighttime Methane Concentrations at the Amazon Tall Tower Observatory (ATTO). [†]

Bourtsoukidis: Strong sesquiterpene emissions from Amazonian soils as product of microbial activity. [†]

nian soils as product of microbial activity. [†]

Cirino: Enhanced NEE of CO₂ due to biogenic aerosol via diffuse radiation fertilization in the Amazon forest: long-term measurements at ATTO – Amazon Tall Tower Observatory. [†]

Ditas: Observation of nucleation size particles in the Amazon. [†]

Franco: Aerosol physical properties at different heights of the ATTO tower in the central Amazon rainforest. [†]

Gomes-Alves: Biogenic Volatile Organic Compound emission patterns of two hyperdominant tree species distributed in an environmental gradient in central Amazonia. [†]

Holanda: Aerosol physical properties over the Amazon basin. [†]

Lavrič: Six-year record (2012-2018) of atmospheric CO₂/CH₄/CO mixing ratios at the Amazon Tall Tower Observatory site (ATTO, Brazil) - interannual variability and footprint characterisation. [†]

Robin: Biogenic Volatile Organic Compound emission patterns in tropical tree species: linking isoprene/monoterpene emission capacity and resource allocation strategies. [†]

Pfannerstill: Total OH reactivity changes above the Amazon rainforest during an El Niño event. [†]

Wolff: Analyses of relevant processes determining surface O₃ concentrations (2013-2017) in the Central Amazon rainforest at the ATTO site. [†]

Zannoni: Diel, vertical and seasonal trends of BVOCs in the Amazonian rainforest from the 325m ATTO tower. [†]



Presentations in other session:

Leppä: High resolution mass spectrometric study of secondary organic aerosol particles from the Amazon rainforest. [†]

Patade: Measurements of primary biological aerosol particles and ice nuclei at the Amazon Tall Tower Observatory. [†]

Sörgel: Partitioning of Ozone deposition fluxes at a rainforest site (ATTO) in the central Amazon basin. [†]

Wang: Long range transport of Saharan mineral dust to the Amazon Basin. [†]

ATTO Project Meeting @ EGU 2019

Save the date: **Friday, 12 April, afternoon.**

We’re currently planning a half day project meeting to take place during the EGU. It will be open to all current ATTO project consortium members attending („Invitation only“) at a location to be determined. Stay tuned for more details, they will be distributed as soon as everything is finalized!



JOINING THE TEAM

New students begin their projects within ATTO



Débora Pinheiro, Ph.D. student at INPA

Débora is a Ph.D. student at the Climate and Environment Department at the Instituto Nacional de Pesquisas da Amazônia (INPA) in Manaus under the supervision of Dr. Rodrigo Souza and Dr. Eliane Alves. She's focusing on the interaction of physical, chemical and biological factors, and the release of VOCs into the atmosphere. In addition, she will compare how this differs between the different landscape ecosystems around ATTO, i.e. plateau, slope, white sand soils, white sand-forest, and valley.



Leslie Kremper, Ph.D. student at MPI-C

Leslie is a Ph.D. student at the Max-Planck-Institute for Chemistry (MPI-C) in Mainz and is working at the Department of Multiphase Chemistry with Dr. Christopher Pöhlker as her supervisor. She will analyse the morphology, composition and hygroscopicity of single aerosol particles from the Amazon using different methods, such as light and fluorescence microscopy, SEM-EDX or Raman spectroscopy. Her research will help creating a better understanding of properties and abundances of particles at this remote place.



Michelle Robin, MSc student at INPA

Michelle is pursuing a Master's degree in Ecology at the Instituto Nacional de Pesquisas da Amazônia (INPA) in Manaus under the supervision of Dr. Juliana Schietti (INPA) and Dr. Eliane Alves (Max Planck Institute for Biogeochemistry). In her research project she aims to understand whether and how emissions of BVOCs - specifically isoprene and monoterpenes - from leaves of tropical tree species are correlated with the fast-slow plant economics spectrum of resource allocation strategies.



Did new people recently join your work group as well? Send an e-mail to iris.moebius@bgc-jena.mpg.de, so we can introduce them in the next newsletter!



COMMUNITY PROJECT

November-December 2018



11



12

Late last year, we invited teachers from four nearby communities of indigenous people along the Uatumã River to ATTO. Representatives of the Secretary of Education of Presidente Figueiredo, the municipality to which these communities belong, joined them on this visit. This was a fantastic opportunity to get to know our neighbors in the forest better, to tell them about our research and show them the observatory.

But that was only the beginning! A few weeks later, some of our colleagues visited schools in these local communities and presented our research. Prior, most students and residents had not known much about our work and were thrilled to learn more about the project. Some teachers immediately asked about the possibility of further developing this partnership. One such option is to create school projects with an environmental focus associated with our research at ATTO. The coordinator of the Sustainable Development Reserve Uatumã was also impressed with the project and would like to expand the interaction to the other schools in the reserve. We are very excited about this development. And we hope these visits will not only serve as a way to inform the whole community about our work but also spark curiosity for science among the children.

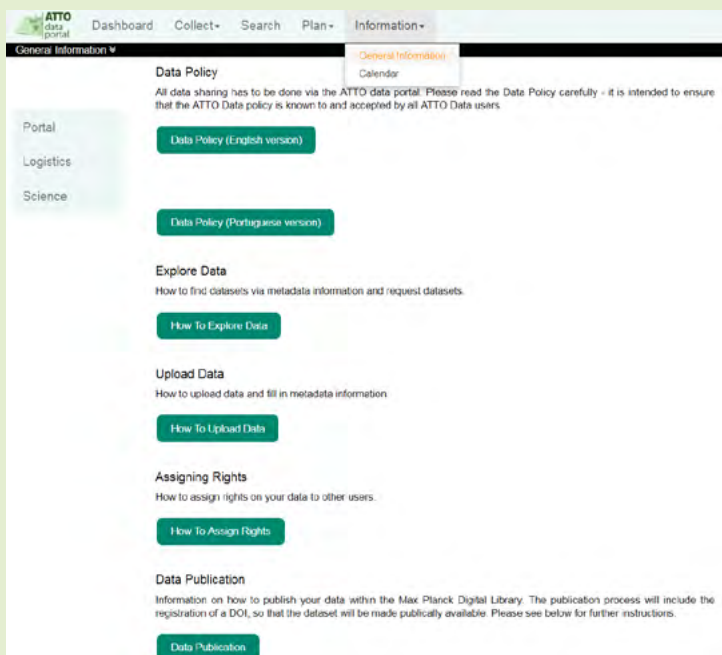
DATA PORTAL UPDATES

New BEXIS version with many additional features installed



Bexis recently updated their software, making it ever so much easier to use our data portal. Some highlights of their new features are:

- In the Primary data view filtering, sorting, and selecting is now available, allowing users to download custom subsets of a dataset (i.e. selected rows/columns).
- Users are now able to request access to a dataset with the click on the request button. Owners of the dataset will be notified by email and can make a decision within the system. Both parties can see and manage the requests from the dashboard.
- Datasets may have attachments of any file type so that any additional information that does not fit into tabular primary data nor metadata (e.g. images, protocols, descriptions) can be included.
- There is also an extended Zip download available incl. separate files for metadata, primary data, data structure, etc.
- With an integrated API-request system it is now possible to get the metadata of a dataset as well as to download primary data via API's.



So head over to the data portal now and upload your data today! In the Information section you will find detailed documentation on how to do that.

Also, please be reminded to return your completed projects sheets to us. Both of these contributions are vital and your cooperation is in everyone's best interest.

TALL TOWER UPGRADES

Update on construction at the tall tower



Over the last three months we have made a big improvement of safety measures at the ATTO tall tower! We have installed a new safety rail, which makes it possible to only latch the harness into the rail once and then climb up all the way to the top with both hands free. The second upgrade is a lift. The main purposes of this lift is to be able to rescue a person in trouble from the tower within a reasonable time and for technicians and scientists

to reach their place of work with less exertion. So now everything is ready to have a safe and in many cases fast and comfortable access all way up the tower, and if need be, to rescue people in need. The lift is not intended to be used by visitors or journalists, who may want to get easy access to the tower. Climbing those 1500 steps to the top really is part of the experience. Many thanks to the engineers of MPI-BGC, Olaf Kolle, Martin Hertel,

Steffen Schmidt, Kerstin Hippler, Uwe Schulz, and Karl Kübler, who have been involved in the planning and execution, as well as to Andrew Crozier, and the technicians of the local company, Vamir, Wessley, and Frank, who assisted the installation.



UPCOMING EVENTS

Conferences



EGU General Assembly[?]

Vienna, Austria on 07 - 12 April 2019

2019

Abstract submission deadline: March 29th

Atmospheric Science Conference 2019[?]

Birmingham, UK on 2 - 3 July 2019
Abstract submission deadline: March 8th

European Aerosol Conference (EAC)[?]

Gothenburg, Sweden on 25 - 30 Aug 2019
Abstract submission deadline: February 28th

Atmospheric Aerosols Summer School: Properties, Measurements, Modeling, and Effects on Climate and Health[?]

Sao Paulo, Brazil on 22 July - 2 August 2019
Application deadline: March 24th

Chapman Conference – Understanding Carbon Climate Feedbacks[?]

San Diego, USA on 26 - 29 Aug 2019
Abstract submission deadline: May 8th

Annual meeting of the Association for Tropical Biology and Conservation (ATBC)[?]

Antananarivo, Madagascar on July 30th - August 3rd 2019
Abstract submission deadline: March 20th

International Symposium on Environmental Biogeochemistry (ISEB)[?]

Potsdam, Germany on 22 - 27 September 2019
Abstract submission deadline: May 31st

Goldschmidt[?]

Barcelona, Spain on 18 - 23 August

IUFRO World Congress[?]

Curitiba, Brazil on 29 September - 5 October 2019
Early bird registration deadline: May 31st

Social Media

ATTOproject.org



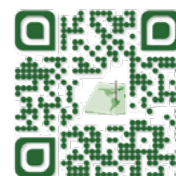
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Iris Moebius,
iris.moebius@bgc-jena.mpg.de

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