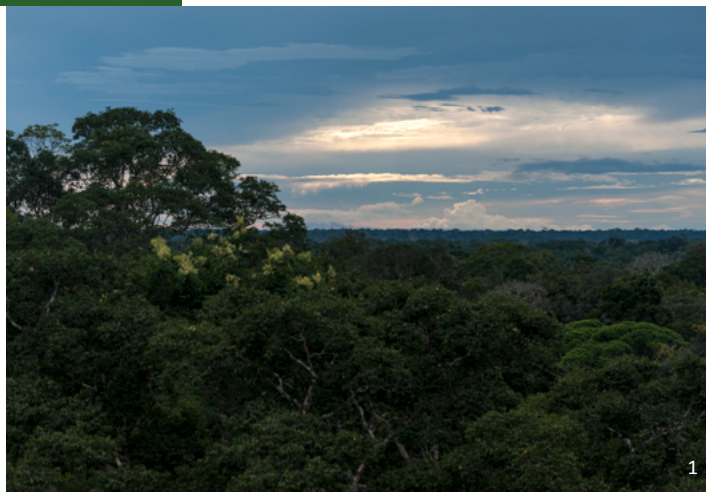




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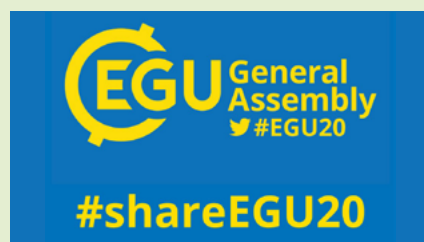
ANNOUNCEMENTS

Impact of COVID-19 on ATTO

Like most everyday activities, ATTO is also affected by the COVID-19 outbreak. We want to ensure the safety of people, especially those living in the Uatumã Sustainable Development Reserve, and are restricted by governmental and institutional guidance. We have therefore minimized our field activities at ATTO since mid-March. For now, a small core team will continue taking care of our long-term measurements. No other researchers will travel to ATTO to collect samples or make measurements until further notice. The HALO CAFE-Brazil field campaign was canceled, though we are hopeful it can be rescheduled in the future. We do not want to impede scientific progress and know this will be an especially difficult time for students. However, we must all do our part in slowing down the spread of COVID-19. As it is difficult to anticipate the duration of these measures, we invite you to check our website or follow our social media channels for updates as the situation develops. In the meantime, we thank those who are working hard to keep ATTO going and hope that you and your loved ones will stay healthy and at home.

EGU2020: Sharing Geoscience Online

This year's EGU will not take place as a physical meeting in Vienna because of the COVID-19 outbreak. Registration fees will be reimbursed, but you have to cancel all travel arrangements individually or through your institute. However, the good news is that the meeting will be held virtually!



Starting April 1, abstract authors can upload presentation materials for others to view and comment on. They will remain online until May 31. Each session will be replaced by a remote chat during the original EGU week (May 3-8). The chat for the session „Amazon forest - a natural laboratory of global significance“ will take place on Friday, May 8 at 10:45 - 12:30. Check out the EGU website¹ for all the details and updates.

ATTO Workshop 2020

The next ATTO workshop will take place in the week of September 21-25 2020 at the INPA in Manaus.



We are optimistic that we will be able to hold the meeting in-person. Should that not be possible, we will meet virtually.

The meeting is envisioned to follow a format similar to last year. That means it will be open to all project members, including students, and will have a strong focus on poster sessions. With this we hope to further increase interaction and collaboration across different disciplines and working groups.

We will share more information in the coming weeks as they become available. Check the ATTO website for updates as well as information on registration and abstract submission.



NEW PUBLICATIONS

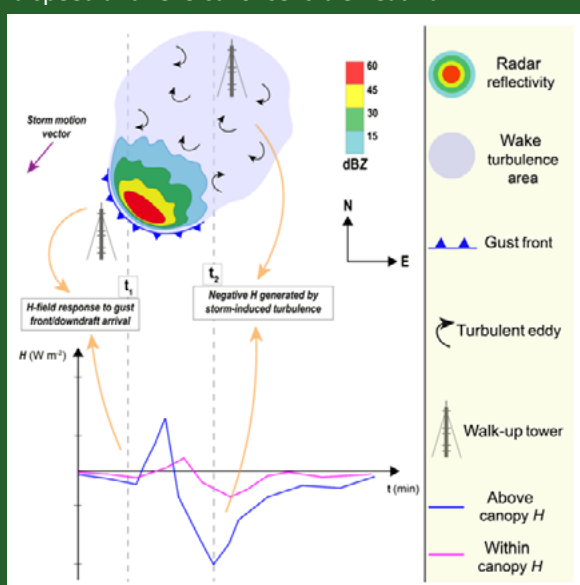
Articles published in peer-reviewed journals between January and March 2020



Oliveira et al.

Planetary boundary layer evolution over the Amazon rainforest in episodes of deep moist convection at the Amazon Tall Tower Observatory[†], Atmos. Chem. Phys., 20
Convective storms often occur in the tropics and have the potential to disturb the lower part of the atmosphere. They might even improve the venting of trace gases out of the forest canopy into the atmosphere above.

High-frequency, multi-level measurements of storm outflows during nighttime at ATTO showed that convective storms can create significant and abrupt changes in atmospheric conditions. The storm events had well-defined gust fronts characterized by a drop in temperature, increase in wind speed and reversal of sensible heat flux.



Löbs et al.

Aerosol measurement methods to quantify spore emissions from fungi and cryptogamic covers in the Amazon[†], Atmos. Meas. Tech., 13.

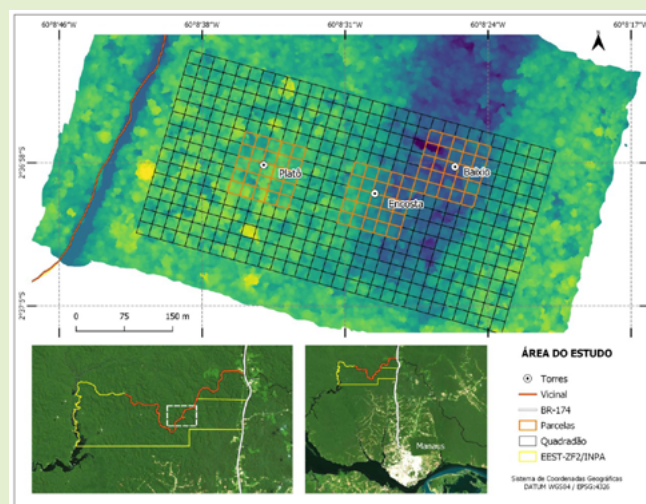
Fungal spore emissions are an important contributor to biogenic aerosols, but we have yet to understand under what conditions fungi release their spores. A new measurement technique allows measuring fungal spore emissions of single organisms.

A case study at ATTO with a single species revealed that fungi release their spores mainly under high air humidity conditions, while temperature and light availability seem to play only a minor role. Nevertheless, the field measurements showed a strong diurnal cycle – the fungi released most spores at nighttime.



NEW PROJECT: INVENTA

Wind-tree interactions in the Amazon



Daniel Marra and Susan Trumbore have started a new project to investigate the interactions of wind with trees in the Amazon. Three research towers (33-36 m tall) monitor wind patterns and feedback on forest dynamics at the ZF2 site. In addition, sensors on several trees measure how they respond to wind, e.g., how much they sway at any given wind speed. They will then put this information in context with the individual properties of the trees, such as their species, height and diameter. The goal is to learn more about dynamics and the vulnerability or resilience of Amazon forests to changing climate. In this context, they put a focus on the increasing frequency of extreme weather events such as heavy storms or downbursts.

Daniel and this team welcome all ATTO members to collaborate on INVENTA and/or develop research at this site.



3

MEET THE TEAM

Introducing members of the ATTO consortium



Milena Ponczek, postdoc at USP

Milena Ponczek is a postdoc at the Laboratory of Atmospheric Physics at the Universidade de São Paulo (Brazil), working in Paulo Artaxo's group. She studies the life cycle of aerosols in the Amazon. In particular, she investigates secondary organic aerosol formation from the oxidation of BVOCs and their subsequent photochemical processing. Her work includes a detailed characterization of both the gas and the particulate phases by sophisticated analytical techniques, such as mass spectrometry, in order to compare their chemical and physical properties.



4

Olaf Kolle, Head of Field Experiments Central Service Group at MPI-BGC

Olaf Kolle is a meteorologist and the head of the group „Field Experiments and Instrumentation at the MPI-BGC in Jena. He and his team are planning, setting up and maintaining field installations, develop scientific instruments, take care of data transmission and more. They travel regularly to different field sites, including ATTO. Together with colleagues from MPI-C, INPA and ROSWAND they designed and installed many of the things you see there, like the outriggers or the entire power supply for everything on the tall tower.



5

Hella van Asperen, postdoc at INPA

Hella van Asperen is a postdoc at the Institute of Environmental Physics in Bremen (Germany), in the group of Prof. Notholt. However, she currently lives in Manaus, where she collaborates with INPA. She started measurements of concentrations and emissions of CH_4 and other gases at ZF2 with a FTIR-spectrometer setup that she developed during her PhD. She also measures CH_4 at ATTO. With a team from MPI-BGC she will install another FTIR there soon to hopefully find out what causes those curious methane peaks observed at both sites.



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INFRASTRUCTURE UPDATES

Robot lift and more



Last September, a new concrete platform was constructed at the base of the tall tower. A few weeks later the new lab container A4 was installed at the site. It will mainly be used by Jonathan William's group for VOC measurements.

The lift on the inside of the tall tower, which had stopped working last summer, was repaired. Afterwards, installation of a second lift on the outside of the tall tower began. Built as a robot lift, it is connected to a power supply rail parallel to the lift rail. It supplies electric energy to power the lift



motors and for the instrumentation placed on it, such as gas and particle analyzers, meteorological sensors, etc. With the robot lift it will be possible to measure high resolution vertical profiles in manual or automatic mode.

Many thanks to the teams of MPI-BGC, MPI-C, HighStep, ROSWAND and our Brazilian staff! They spent many months to complete this project in time for CAFE Brazil. Even though the campaign was now postponed, the robot lift will offer many exciting opportunities to collect valuable data.



NEWS FROM DATA PORTAL AND WEBSITE

Introducing DOIs, a blog and more



Data portal updates

The ATTO data portal software BEXIS was recently updated and includes some important and helpful features, including:

- login with email address (prior just with account name),
- shows version information of datasets and allows to switch between dataset versions,
- you can link datasets or other entities (e.g. publications) via metadata entry or external link.

Even more importantly, thanks to the Max Planck Digital Library, we can now generate and assign DOIs to our datasets. The "How To" documents will be revised accordingly within the next weeks.

So far, 142 people have registered to the portal. 40 datasets were uploaded that have been downloaded 83 times.

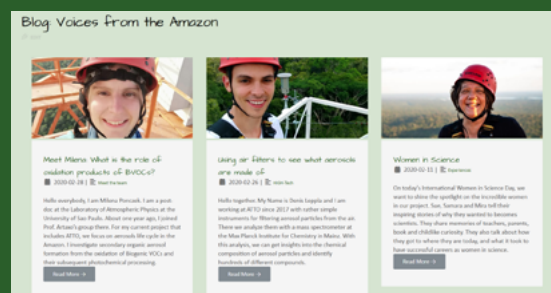


- Walk-up tower
- Tall Tower
- Triangular Mast

Thank you to everyone for this collective effort! If you have not done it yet, getting your data up onto the portal is a very useful job you can do while working from home! The data management team stands by to assist you with any question or problem. And, the portal is a great resource for information regardless if you have data to upload or not.

Website updates

We now have a blog on our website called „Voices from the Amazon“! Through the lenses of several different series, you can share what it is like to work within the ATTO project:



- **Meet the team:** Team members are introducing themselves and share some insight about their background and their current project within ATTO.
- **HIGHtech:** Team members present an instrument or machine that they use at ATTO or back home to collect data. They share personal accounts of what their work with the instrument entails.
- **Experiences:** A variety of posts, such as the „Women in Science“-special or memorable fieldwork experiences you would like to share.

Now we are looking for YOUR contributions and ideas! Please contact Iris Möbius for details.

UPCOMING EVENTS



Many meetings are impacted by COVID-19. Please check the meeting websites for the latest updates.

May 3 - 8 2020

EGU2020: Sharing Geoscience Online⁹

-> This year's EGU will be held online. Presentation materials can be uploaded and viewed April 1 to May 31.

June 21 - 26 2020

Goldschmidt 2020: Global Virtual Conference⁹

-> The meeting will be held online.

Biogenic Hydrocarbons and the Atmosphere⁹ in Ventura, CA, USA

-> The meeting is postponed to 2022.

Annual Meeting of the Association of Tropical Biology and Conservation (ATBC)⁹ in Cartagena, Colombia

-> The meeting is postponed to July 11 - 15 2021.

August 24 - 28 2020

Eurosoil 2020⁹ in Geneva, Switzerland

Early registration deadline: May 28 2020.

August 30 - September 4 2020

European Aerosol Conference⁹ in Aachen, Germany

Early registration deadline: June 15 2020.

September 21-25

ATTO Meeting 2020 in Manaus, Brazil.

More details to be announced.

SHORT NOTICES



PhD Defence

Carsten Simon, member of Gerd Gleixner's group at the MPI-BGC, recently defended his PhD thesis. Congratulations!

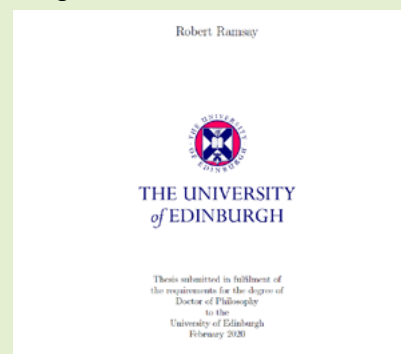
Carsten worked on the „Identification of ecosystem-specific markers in terrestrial dissolved organic matter (DOM) by Orbitrap mass spectrometry“. ATTO was among the field sites where he studied DOM.



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PhD Defence

Robert Ramsay studied under the supervision of Prof. Mathew Heal at the University of Edinburgh. He recently defended his PhD thesis on „Surface atmosphere dynamics of reactive trace gases and water-soluble aerosol components above agricultural grassland and tropical rainforest“, which included ATTO. Congratulation!



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IMPRINT

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