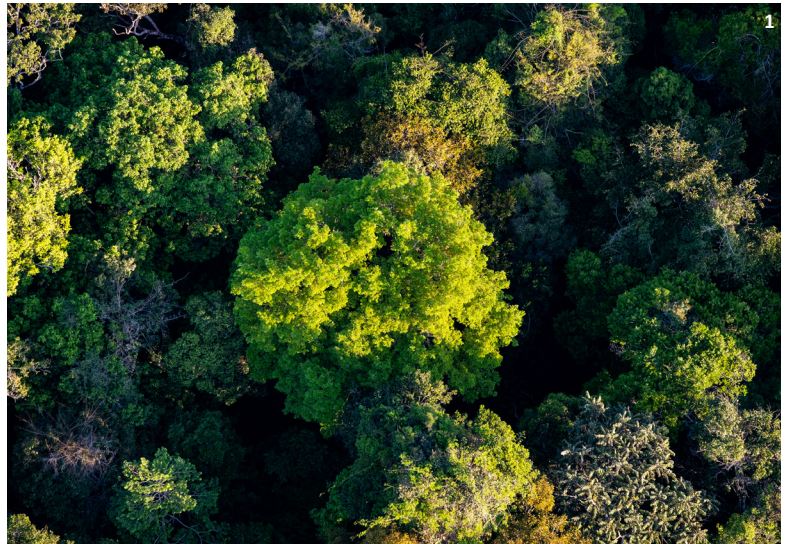




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## NEW PUBLICATIONS

Papers published between August 2020 and January 2021



Souza & Mathai et al.  
**Influence of seasonality on the aerosol microbiome of the Amazon rainforest**<sup>↗</sup>, Science of the Total Environment

Felipe Souza, Price Mathai and their co-authors analyzed the diverse bacterial population in the Amazonian atmosphere. It mainly varies with seasonal changes in temperature, relative humidity, and precipitation, but they did not detect significant differences between the ground and canopy levels. Among the bacterial species they found, they identified some that participate in the nitrogen cycle.



Löbs et al.  
**Microclimatic and ecophysiological conditions experienced by epiphytic bryophytes in an Amazonian rain forest**<sup>↗</sup>, Biogeosciences

A new study by Nina Löbs and her colleagues documented the microclimatic conditions for tropical mosses as a baseline for studies on their overall relevance on biogeochemical cycling. They found that water and light are overall the most important requirements for mosses to become photosynthetically active. However, their habitat determines if water or light plays the bigger role.



Camarinha-Neto et al.  
**The friagem event in the central Amazon and its influence on micrometeorological variables and atmospheric chemistry**<sup>↗</sup> Atmos. Chem. Phys.

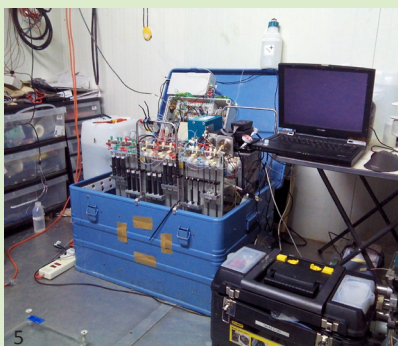
Sporadic incursions of cold waves in the Amazon are called *friagem* events. During Friagem events the temperature drops and cloudiness increases. Guilherme Camarinha-Neto and his colleagues now found that in addition, these events also affect O<sub>3</sub> and CO<sub>2</sub> concentrations, likely due to a decrease in photosynthesis and vertical stratification of the atmosphere.



Ramsay et al.

**Concentrations and biosphere-atmosphere fluxes of inorganic trace gases and associated ionic aerosol counterparts over the Amazon rainforest**<sup>7</sup>, Atmos. Chem. Phys.

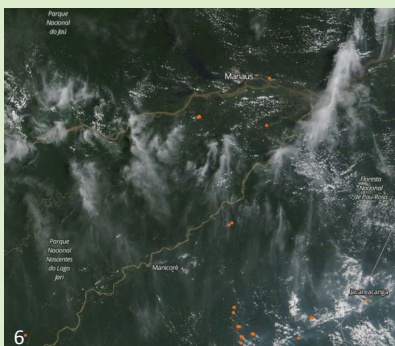
Robbie Ramsay and his colleagues measured inorganic trace gases such as ammonia and nitric acid, as well as aerosols in the dry season at ATTO, as well as their dry deposition rates. They are to serve as baseline values for the concentration and fluxes in the atmosphere and are a first step in deciphering exchange processes of inorganic trace gases between the Amazon rainforest and the atmosphere.



Liu et al.

**Impact of biomass burning aerosols on radiation, clouds, and precipitation over the Amazon: relative importance of aerosol-cloud and aerosol-radiation interactions**<sup>7</sup>, Atmos. Chem. Phys.

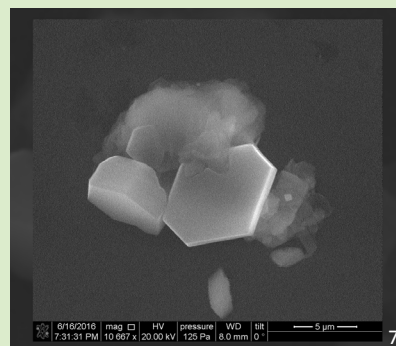
Soot and other aerosols from biomass burning can influence radiation and cloud formation processes. Lixia Liu and her colleagues studied how this affects the Amazon Basin during the dry season. While there are many different interactions between biomass burning aerosols and climate, they found that they overall lead to fewer and weaker rain events in the Amazon rainforest.



Schrod et al.

**Long-term deposition and condensation ice-nucleating particle measurements from four stations across the globe**<sup>7</sup>, Atmos. Chem. Phys.

Most of the global precipitation is formed with the help of ice nucleation particles (INPs), but large knowledge gaps still exist. Jann Schrod and his team compiled a unique long-term record of INP measurement at four sites, including ATTO. They did not find significant differences in INP concentrations between the sites, nor any clear trends. This underlines the need for further studies to understand the controlling mechanisms.



## VEGU 2021

*Tropical ecosystems - biomes of global significance in transition*

The EGU has announced that the General Assembly 2021, traditionally held each spring in Vienna, Austria, will instead take place entirely online due to the continuing risks posed by the coronavirus pandemic and the resulting restrictions on international travel.

The format of this year's virtual EGU is different from last year's. Each abstract author will have a 2-minute presentation in the new EGU virtual PICO (vPICO) session format. Following the presentations, each abstract will have a breakout webinar. Like last year, materials can additionally be displayed online for registered conference attendees during a 2-month period. You can find all the details on the EGU 2021 website<sup>7</sup>.

We are happy to share that we will once again convene a session on Amazon Rainforest research. The session is titled "Tropical ecosystems – biomes of global significance in transition"<sup>7</sup>.

It is placed within program group BG2 and co-organized by AS2, HS10 and SSS8. Jošt Lavrič, Alexander Knohl, Julia

Drewer, Laynara F. Lugli, Beto Quesada, Matthias Sörgel and Hans Verbeeck are conveners.

Early registration rates are available until 31 March 2021. These are lower compared to previous years, and free for students and PhD candidate from all middle income countries, which includes Brazil.





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## MEET THE TEAM

Introducing members of the ATTO consortium



### Shujiro Komiya at MPI-BGC<sup>†</sup>

Shujiro Komiya, or short Komi, is a postdoc in the group of Jošt Lavrič at MPI-BGC in Jena. He got his Master and PhD degrees from Meiji University in Tokyo in Japan, where he build up chamber systems to study greenhouse gas dynamics in rice paddy fields in temperate Japan and tropical Thailand. In 2017, he joined ATTO to develop a vertical profile measurement system of water vapor stable isotopes. He wants to clarify how water is (re-)cycled in the Amazon rainforest on a regional scale. In order to do this, he is anxious to back to ATTO and is preparing to conduct some field campaigns, once the pandemic permits it.



### Maria Prass, PhD at MPI-C<sup>†</sup>

Maria grew up in the German countryside and was always fascinated with forests. Thus, she decided to study Biology. During her Master studies, she started working at MPI-C in Mainz in the group of Christopher Pöhlker, where she now pursues her PhD. She analyzes the airborne concentrations and distribution of bioaerosols within and above the forest canopy. She implemented a new technique called “Fluorescence in Situ Hybridization”. By making bioaerosols shine in bright fluorescent colors under the microscope, she can draw conclusions on their airborne numbers and thus, their potential influence on climatic in the Amazon.





## SHORT NOTICES

Congratulation to all Master's students on finishing their thesis

**Jeová Ramos da Silva Junior**, a master student at the USP supervised by Dr. Marcia Yamasoe, finished his Master's on radiation transfer in the forest canopy titled „Estudo da Transferência de Radiação em Dossel de Floresta com o Uso de Modelo de Transferência Radiativa Tridimensional“.



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**Janaína Quixabeira Gonçalves**, a master student at the MAUA/KIT group at INPA, finished her Master's on „Impacts of recent extreme hydro-climatic intensification on growth of Nectandra amazonum in a Central Amazonian floodplain forest“. She was supervised by Dr. Flavia Durgante, Dr. Jochen Schongart and Janaína



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**Michelle Robin**, a master student at INPA, finished her Master's under the supervision of Dr. Juliana Schietti and Dr. Eliane Gomes-Alves. Her thesis is titled „The balance between isoprenoid production and resource allocation strategies in central Amazon tree species“. Starting in May, Michelle will continue her studies as a PhD student at MPI-BGC in Jena.



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**Priscila Amaral de Sá** was a master student supervised by Dr. Jochen Schongart and Dr. Flavia Durgante in the MAUA/KIT group at INPA. She recently finished her thesis titled „Minimum temperature and evapotranspiration in Central Amazon floodplains limit tree growth of Nectandra amazonum (Lauraceae)“.



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## FELIZ NATAL

SHARING WITH OUR NEIGHBORS



Reinforced by the pandemic, we wanted to continue our new tradition of sharing some Christmas joy with our neighbors in the forest. Shortly before Christmas, Nagib Alberto Castro Souza once again slipped into the role of Santa, and together with Bruno Takeshi brought some supplies and goodies to river communities near ATTO.

To keep themselves and these vulnerable communities safe, they took all necessary precautions, like wearing masks and gloves. Although it was much smaller event than the previous year, it was a joyous occasion, and we hope we can visit in larger numbers again soon and continue our informational projects in our neighborhood communities.



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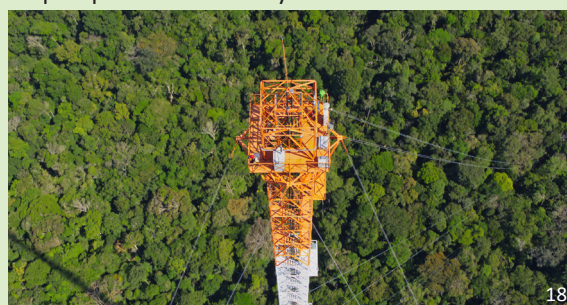
## MEDIA DIGEST



BBC<sup>↗</sup>/ZDF<sup>↗</sup> (TV documentary)

### A Perfect Planet, Episode 5: Humans

The final episode of the latest BBC series from David Attenborough focuses on the human impact on Planet Earth, good and bad. It features a short sequence with our PhD student Santiago Botía at ATTO in the context of scientists studying the climate to better understand the processes and ultimately help to protect vital ecosystem like the Amazon.



## UPCOMING EVENTS



April 25-30 2021, online

### vEGU 2021<sup>↗</sup>

Early Registration deadline: March 31, 2021.

July 4-9 2021, Lyon, France & online

### Goldschmidt 2021<sup>↗</sup>

Abstract submission deadline: Feb. 26, 2021

The conference is planned as a hybrid format with on-site and online participation.

August 23-27, Geneva, Switzerland

### Eurosoil 2021<sup>↗</sup>

postponed from 2020 and closed for submissions

Early-bird registration deadline: May 27, 2021

Currently still planned as an on-site meeting.

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