Curriculum Vitae Prof. Paulo Artaxo

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Prof. Paulo Artaxo graduated in Physics from Universidade São Paulo (1977) with a master's degree in Nuclear Physics from USP (1980) and a PhD in Atmospheric Physics from USP (1985). He worked at NASA (United States), the Universities of Antwerp (Belgium), Lund (Sweden), and Harvard (United States). He is currently a full professor in the Department of Applied Physics at the USP Physics Institute. He works with physics applied to environmental problems, mainly on issues of global climate change, the environment in the Amazon, atmospheric aerosol physics, urban air pollution, and other topics. He is a full member of the Brazilian Academy of Sciences (ABC), the World Academy of Sciences (TWAS), and the Academy of Sciences of the State of São Paulo (ACIESP). He published 519 scientific works and presented more than 1200 papers at international conferences. He has 73,378 citations in Google Scholar, with an H index in Google Scholar of 127, and 60,202 citations of his works in Research Gate, with an H index of 122. He has published 35 papers in journals in the Science and Nature groups. He is a member of the IPCC (Intergovernmental Panel on Climate Change) and several other international scientific panels. He is the coordinator of the FAPESP Global Climate Change Program and a member of INCT Climate Change. He is vice-president of the Brazilian Society for the Progress of Science (SBPC), vice-president of the Academy of Sciences of the São Paulo State (ACIESP), and a member of the Brazilian Physical Society (SBF) Council. In 2004, he received a vote of applause from the Brazilian Senate for his scientific work on the environment in the Amazon. In 2006, he was elected as a fellow of the American Association for the Advancement of Sciences. He is a member of the IPCC team awarded the 2007 Nobel Peace Prize. In 2007, he received the TWAS Earth Sciences Prize and the 2007 Dorothy Stang Science and Humanities Prize. In 2009, he was awarded the title of Doctor in Philosophy Honoris Causa from Stockholm University, Sweden. In 2010, he received the Fissan-Pui-TSI award from the International Aerosol Research Association. He also received the Order of National Scientific Merit in 2010 as commander and in 2018 as Grand Cross. In 2016, he received the Admiral Álvaro Alberto Award granted by CNPq, the Navy, MCTI, and the Conrad Wessel Foundation. He is an Emeritus Researcher at CNPq. In 2017 he received the Globo Faz a Diferença Award. In 2021, he received the CONFAP Science and Technology award; in 2024, he received the PIFI award from the Chinese Academy of Sciences. He was included in the Clarivate Analytics list as belonging to the top 1% of most cited researchers worldwide in 2014, 2015, 2018, 2019, and 2020. In 2022 and 2023, he was the most cited Brazilian scientist in the environmental area, according to Research.com. He is the Director of the Center for Sustainable Amazon Studies (CEAS) at the University of São Paulo.

Personal

Full name: Paulo Eduardo Artaxo Netto, born on January 25, 1954. Nationality: Brazilian. Married to Ana Paula Freire Artaxo Netto, with three kids.

Professional appointments

Graduation: Institute of Physics, University of Sao Paulo, Brazil, November 1977.

Master's Degree: Institute of Physics, University of Sao Paulo, Brazil, March 1980.

Ph.D.: Ph.D. in Sciences, Institute of Physics, University of Sao Paulo, Brazil, December 1985.
Assistant professor of Environmental Physics at USP from 1985 to 1994.
Visiting professor at Harvard University in 2009 and 2017 and Stockholm University in 2016.

Post-Doctoral Researcher at the Florida State University, Tallahassee, US; University of Antwerp, Belgium, NASA, USA; Harvard University, USA; and University of Lund and Stockholm, Sweden.
Full professor of Environmental Physics, University of São Paulo, since 2002.
Visiting Researcher at the Max Planck Institute for Chemistry, Mainz, Germany, April 2023 to 2024.
Director of the USP Center for Amazonian Sustainability Studies (CEAS).

Membership in Professional Societies

European Geophysical Union (EGU), American Geophysical Union (AGU), American Association for the Advancement of Science (AAAS), European Geochemical Society (EGS), American Association for Aerosol Research (AAAR), Sociedade Brasileira para o Progresso da Ciência (SBPC), Sociedade Brasileira de Física (SBF).

Awards

1) **Applause vote by the Brazilian Senate in 2004.** The Brazilian Senate gave him an applause vote for his studies related to Amazonia and the role of aerosol particles, which was awarded in 2004.
2) **Fellow of the AAAS** – American Association for the Advancement of Science. 2007.
3) **Member of the IPCC team** – The Intergovernmental Panel on Climate Change that received the Nobel Peace Prize with Al Gore in 2007. Lead author of the IPCC WG1 for AR4 (Chapter 2 - Radiative forcing), AR5 (Chapter 7 – Aerosols and clouds), and AR6 (Chapter 6 – Short-Lived Climate Forcers. Lead author of the IPCC SRCCL (Chapter 2 - Land and climate interactions). Member of the IPCC team on the Special Report on Aviation and the Global Atmosphere and lead author of the IPCC Task Force on Geoengineering.
4) **Earth Science TWAS Prize 2007**. Award issued by the World Academy of Sciences "For his outstanding work in understanding the role of biomass-burning aerosols on cloud processes and the radiation balance in the Amazon Basin."
5) **Member of the Brazilian Academy of Sciences** in 2005. **Member of the World Academy of Sciences (TWAS)** in 2010**. Member of the Academy of Sciences of the State of São Paulo, Brazil,** in 2012. Vice President from 2018-2023.
6) Title of "**Doctorate of Philosophy Honoris Causa**" awarded by the University of Stockholm, Sweden, in September 2009.
7) I**n 2010, the International Aerosol Research Association' Award, Fissan-Pui-TSI**, recognized his international scientific cooperation in aerosol research.
8) Awarded the "**Prêmio Globo Faz a Diferença**" in 2016 from the Organizações Globo.
9) In 2016, received the "**Prêmio Almirante Álvaro Alberto**" from MCTI, CNPq, Brazilian Navy, and Fundação Conrad Wessel, the most prestigious science prize in Brazil.
10) In 2018, received the **Gran Cruz Ordem do Mérito Científico Nacional** from the Brazilian government**.**
11) **ISI- Clarivate-Web of Science Most Highly Cited Researcher** in 2014, 2017, 2018, 2019, and 2020.
12) **CONFAP** (Confederation of Brazilian Funding Agencies) Prize on Science and Technology in 2021.
13) **PIFI Award** from the Chinese Academy of Sciences (2024).

Publications

Year	Up to 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Papers	281	27	30	25	27	24	22	18	26	18	30	7

(*) (*) The total number of published papers is **519 papers**. He has published 35 journal articles in the Nature and Science family magazines**.**

Selected publications

1) **Artaxo, P.,** Working together for Amazonia. Editorial *Science Magazine*, Vol. 363, Issue 6425, doi: 10.1126/science.aaw6986, January 2019.
2) **Artaxo, P**., Break down boundaries in climate research. World View Section, *Nature* 481, 239, 2012.

3) Davidson, E., A., Alessandro C. A., **P. Artaxo**, J. K. Balch, I. F. Brown, M. C. Bustamante, M. T. Coe, R. S. DeFries, M. Keller, M. Longo, J. W. Munger, W. Schroeder, B. S. Soares-Filho, C. M. Souza Jr., S. C. Wofsy. The Amazon Basin in Transition. *Nature,* 481, 321-328, 2012.

4) Andreae, M.O., D. Rosenfeld, **P. Artaxo**, A. A. Costa, G. P. Frank, K. M. Longo, and M. A. F. Silva-Dias, Smoking rain clouds over the Amazon. *Science*, Vol. 303, (5662) 1337-1342, 2004.

5) Clayes, M., B. Graham, G. Vas, W. Wang, R. Vermeylen, V. Pashynska, J. Cafmeyer, P. Guyon, M. O. Andreae, **P. Artaxo**, W. Maenhaut. Formation of secondary organic aerosols through photo-oxidation of isoprene. *Science*, Vol. 303, 1173 - 1176, 2004.

6) Jiwen Fan, **P. Artaxo**, et al., Substantial Convection and Precipitation Enhancements by Ultrafine Aerosol Particles. *Science*, Vol. 359, Issue 6374, pp 411-418, DOI: 10.1126/science.aan8461, 2018.

7) Rahman. A. A., **P. Artaxo**. A. Asrat, A. Parker. Developing countries must lead on solar geoengineering research. Nature, Vol. 556, Pg. 22-24, 2018

8) Yingjun Liu, **P. Artaxo**, et al., Isoprene photo-oxidation products quantify the effect of pollution on hydroxyl radicals over Amazonia. Sciences Advances, Vol. 4, No. 4, DOI: 10.1126/sciadv.aar2547, 2018.

9) Wang, J., **P. Artaxo**, et al., Vertical transport during rainfall sustains aerosol concentration in Amazon boundary Layer. Nature, 539, 416-419, doi:10.1038/nature19819, 2016.

10) Scott, C., **P. Artaxo**, et al., Impact on short-lived climate forcers increases projected warming due to deforestation. *Nature Communications,* Vol. 9, 157, doi:10.1038/s41467-017-02412-4, 2018.

11) Bateman, A. P., **P. Artaxo**, et al., Submicron Particulate Matter is Primarily in Liquid Form over Amazon Rain Forest. Nature Geosciences, 9, 34-37, doi:10.1038/ngeo2599, 2015.

12) Reddington, C. L., E.W. Butt, D. A. Ridley, **P. Artaxo**, W. T. Morgan, H. Coe, and D. V. Spracklen. Air quality and human health improvements from reductions in deforestation-related fire in Brazil, Nature Geoscience 8, 768–771 (2015) doi:10.1038/ngeo2535 2015.

13) Pöhlker, C., **P. Artaxo**, et al., Biogenic potassium salt particles as seeds for secondary organic aerosol in the Amazon. Science, 337, 1075-1078, doi: 10.1126/science.1223264, 2012.

14) Bowman, **P. Artaxo**, et al., Fire in the Earth System. *Science,* 324, 481-484, DOI: 10.1126/science.1163886, 2009.

15) Pöschl, U., **P. Artaxo**, et al., Rainforest aerosols as biogenic nuclei of clouds and precipitation in the Amazon. *Science*, 329, 1513-1516, doi: 10.1126/science.1191056, 2010.

16) Prenni, A. J., **P. Artaxo**, et al., Relative roles of biogenic emissions and Saharan dust as ice nuclei in the Amazon basin. *Nature Geosciences,* 2, 402-405, 2009.

17) Chambers, J. Q., and **P. Artaxo**. Deforestation size influences rainfall. *Nature Climate Change*. Vol. 7, 175-176 (2017) doi:10.1038/nclimate3238.

18) Dasa Gu, **P. Artaxo**, et al., Airborne observations reveal an elevational gradient in tropical forest isoprene emissions. *Nature Comm.*, 8, 15541 doi: 10.1038/ncomms15541, 2017.

19) Salvo, A., **P. Artaxo**, et al., Reduced ultrafine particle levels in São Paulo's atmosphere during shifts from gasoline to ethanol use. *Nature Communications*, 8, 77-93. DOI: 10.1038/s41467-017-00041-5.

20) Alves, N. O., **P. Artaxo**, et al., Biomass burning in the Amazon region causes DNA damage and cell death in human lung cells. *Nature Scientific Reports*, Vol. 7, Article number 10937, 2017. DOI:10.1038/s41598-017-11024-3.

21) Scott, C. E., **P. Artaxo**, et al., Impact on short-lived climate forcers increases projected warming due to deforestation. Nature Communications, Vol. 9, 157, doi:10.1038/s41467-017-02412-4, 2018.

22) Bourtsoukidis, E., **P. Artaxo,** et al., Strong sesquiterpene emissions from Amazonian soils. *Nature Communications*, 9, 2226, DOI: 10.1038/s41467-018-04658-y. 2018.

23) China, S., **P. Artaxo**, et al., Fungal spores as a source of sodium salt particles in the Amazon basin. Nature Communications, vol. 9, Article number: 4793, https://doi.org/10.1038/s41467-018-07066-4, 2018.

24) Shrivastava, M., **P. Artaxo**, et al., Urban pollution greatly enhances the formation of natural aerosols over the Amazon rainforest. Nature Communications, Vol. 10, 1, 1046, https://doi.org/10.1038/s41467-019-08909-4, 2019.

25) William T. Morgan, Eoghan Darbyshire, Dominick V. Spracklen, **Paulo Artaxo** & Hugh Coe. Non-deforestation drivers of fires are increasingly important sources of aerosol and carbon dioxide emissions across Amazonia. Scientific Reports Nature 9:16975 https://doi.org/10.1038/s41598-019-53112-6, 2019.

26) de Oliveira, G., Chen, J.M., Stark, S.C., Berenger, E., Moutinho, P., **Artaxo, P**., Anderson, L.O., Aragão, L.E.O.C. Smoke pollution's impacts in Amazonia. Science, Vol. 369, issue 6504, 634-635, DOI: 10.1126/science.abd5942, 2020.

27) Holanda, B. A., **P. Artaxo** et al., African biomass burning affects aerosol cycling over the Amazon. Nature Communications Earth and Environment (2023) 4:154. https://doi.org/10.1038/s43247-023-00795-5 .

28) Pöhlker, M. L., **P. Artaxo**, et al., Global organic and inorganic aerosol hygroscopicity and its effect on radiative forcing. Nature Communications, 14, 6139, doi:10.1038/s41467-023-41695-8 (2023).

29) de Oliveira, G., **Artaxo, P**., et al., Increasing wildfires threaten progress on halting deforestation in Brazilian Amazonia. Nature Ecology and Evolution (2023). https://doi.org/10.1038/s41559-023-02233-3.

30) Caravan, R.L., Observational evidence for Criegee intermediate oligomerization reactions relevant to aerosol formation in the troposphere. Nat. Geosci. 17, 219–226 (2024). https://doi.org/10.1038/s41561-023-01361-6.

31) Blichner, S.M., **P. Artaxo**, et al., Process evaluation of forest aerosol-cloud-climate feedback shows clear evidence from observations and large uncertainty in models. Nature Communications, 15, 969 (2024) https://doi.org/10.1038/s41467-024-45001-y.

32) Cheesman, F., Artaxo, P. et al. Reduced productivity and carbon drawdown of tropical forests from ground-level ozone exposure. Nat. Geosci. (2024). https://doi.org/10.1038/s41561-024-01530-1.

33) Luiz A. T. Machado et al., Frequent nanoparticles burst in the Amazon rainforest. Nature Geoscience, 1752-0908 https://doi.org/10.1038/s41561-024-01585-0, 2024.

34) Joachim Curtius et al., Isoprene nitrates drive new particle formation in Amazon's upper troposphere. Nature, Vol 636, https://doi.org/10.1038/s41586-024-08192-4.

Synergistic activities

1) Lead Author of IPCC AR4, Chapter 2 – Changes in Atmospheric Constituents and Radiative Forcing, 2004-2007.
2) Lead Author of IPCC AR5, Chapter 7 – Clouds and Aerosols, 2010 - 2013.
3) Lead Author of IPCC AR6, Chapter 6 – Short-Lived Climate Forcers – 2018 - 2022.
4) Lead Author of IPCC Special Report on Land and Climate, chapter 2, 2018-2019.
5) Member of the IPCC task force on geoengineering in 2011.
6) Member of the IPCC team on the Special Report on Aviation and the Global Atmosphere, 1999.
7) Member of the UNEP SAP – Science Advisory Panel for the UNEP GEO-6, 2015-2019.
8) Coordination of the UNEP Latin America Short-Lived Climate Forcers Assessment, 2013-2018.
9) President of the Scientific Steering Committee of the LBA experiment (The Large-Scale Biosphere-Atmosphere Experiment in Amazonia), 2005-2019.
10) Director of the Climate Change Research Program at FAPESP (Fundação de Amparo à Pesquisa do Estado de São Paulo), 2010-now.
11) Listed in the ISI Thomson Reuters as "The Word's Most Influential Scientific Minds" in 2014, 2015, 2018, 2019, and 2020.
12) Listed on the Research Gate and Stanford University as the world's top scientists.
13) Member of the Brazilian Academy of Sciences since 1995.
14) Member of the Board of Directors, Brazilian Academy of Sciences 2015-2019.
15) Member of the TWAS – The World Academy of Sciences since 1998.
16) Member and Vice-President of ACIESP – Academy of Sciences of São Paulo State, 2010.
17) President of the Science Advisory Committee of IPAM – Instituto de Pesquisas da Amazonia.
18) Head of the Atmospheric Physics Laboratory at the University of São Paulo since 1985.
19) Vice President of the Brazilian Association for the Advancement of Science (SBPC), 2021-now
20) Director of the University of São Paulo Center for Amazonian Sustainability (CEAS).