

CURRICULUM VITAE

First Name: **Ana Maria**

Family Name: **Yáñez Serrano**

EDUCATION

01.01.2012 - 03.06.2015

Max Planck Institute for Chemistry, Mainz, Germany

International Max Planck Research School (IMPRS) PhD certificate stating that the PhD obtained from INPA/UEA was done following the German PhD requirements.

01.08.2011- 03.06.2015

INPA - UEA (University of the State of the Amazon), Manaus, Brazil

PhD in Climate & Environment – LBA project INPA/UEA. Thesis title: *Dynamics of Biogenic Volatile Organic Compounds in and above a central Amazonian forest site.*

- Supervisors: Prof. Dr. Paulo Artaxo (Sao Paulo University, USP) and Prof. Dr. Jürgen Kesselmeier.
- This PhD was financed by CAPES and MPIC. Projects involved: ATTO project (BMBF funds 01LB1001A; FINEP/MCTI contract 01.11.01248.00) and FAPESP grant 2013/25058-1 e 2013/05014-0.

01.09.2009 – 01.06.2011

Lund University, Lund, Sweden

ABS Master Program – Master on Atmospheric Science and Biogeochemical cycles. Master thesis title: *Within-canopy Sesquiterpene Ozonolysis in Amazonia.*

- Research work performed in an Amazon rainforest site under the LBA program (INPA) and University of Arizona. Supervisors: Dr. Almut Arneth, Dr. Kolby Jardine and Prof. Dr. Paulo Artaxo.

01.09.2006 – 01.06.2009

University of Nottingham, Nottingham, UK

BSci Hons in Environmental Science. Final research project: *Impacts of grazing on the carbon cycle in alpine ecosystems: case study of the Pyrenees.*

Supervisor: Dr. Sofie Sjögersten.

01.09.2004 - 01.06.2006

Escola Americana do Rio de Janeiro (EARJ), Rio de Janeiro, Brazil.

American High School Diploma.

01.09.2001- 01.06.2004

Instituto San Juan Bautista, Madrid, Spain

Mandatory Secondary Education (ESO).

TEACHING EXPERIENCE

01.08.2013 – 01.11.2013

Teaching assistance of the graduate course for meteorology at UEA (State University of the Amazon) called "Atmospheric Chemistry". 60 hours.

01.03.2013 – 01.06.2013

Teaching assistance of the graduate course for meteorology at UEA (State University of the Amazon) called "Biogeochemical cycles and Global Change". 60 hours. For this course, only the syllabus was given, and I had to create all teaching material.

WORKING EXPERIENCE

01.04.2019 – Now

CREAF Ecological and Forestry Applications Research Center, Autonomus University of Barcelona, Spain. Awarded a Juan de la Cierva incorporacion grant for Post-doctoral studies.

01.09.2016 – 15.03.2019

University of Freiburg, Freiburg im Breisgau, Germany. Post-doctorate in ERC project (VOCO₂, 647008) fellowship investigating the carbon plant emissions from primary and secondary plant metabolism. I was in charge of the measurements and data analysis of plant level volatile organic compound emissions with the PTR-TOF-MS Supervisor: Prof. Dr. Christiane Werner.

15.06.2015 – 30.08.2016

Max Planck Institute for Chemistry, Mainz, Germany

Post-doctorate scholarship investigating Biogenic Volatile Organic Compounds (BVOCs) in the Amazonian ecosystem. Supervisor: Prof. Dr. Jürgen Kesselmeier (Max Planck Institute of Chemistry, MPIC). As work was carried out at INPA (the Brazilian National Institute for Amazonian Research), I served as a bridge between the international institutions. This scholarship was funded by the ATTO project (BMBF funds 01LB1001A; FINEP/MCTI contract 01.11.01248.00).

01.06.2008 – 01.09.2008

Student Internship in ENRESA (The Spanish national company for the management of radioactive waste), Madrid, Spain.

I was allocated to the department of decommissioning of nuclear power plants (NPP). My duties consisted on gathering information about the public participation and socio-economic factors of NPP decommissioning projects from several internal and external reports and the consequent creation of a report, which was to be published by the European Commission in April 2009.

03.2008

Repsol YPF. Rio de Janeiro, Brazil.

Shadowing of Sirgiane Cardozo, environmental, safety and quality analyst of the exploration and production department of Repsol YPF Brazil. With this, I developed my knowledge in environmental impact assessments (EIA), and more specifically in the Brazilian legislation with respect to oil drilling EIA. I also had my first contact with a large private company.

LANGUAGES

- Spanish – native language
- English – proficiency (TOEFL, SAT's)
- Portuguese - proficiency (Celpe bras)
- German - basic

IT software's

- Office
- Vensim, Stella and Modelmaker
- GIS Arcview
- Genstat
- iGOR Wavemetrics
- Basic concepts of MATLAB

INSTRUMENTATION EXPERIENCE

- PTR-TOF-MS - Proton Transfer Reaction – Time of Flight – Mass Spectrometer
- PTR-MS - Proton Transfer Reaction Mass Spectrometer
- GC-FID/MS - Gas Chromatography Flame Ionization Detection/Mass Spectrometer
- ACSM- Aerosol Chemical Speciation Monitor
- AMS - Aerosol Mass Spectrometer

- SMPS - Scanning Mobility Particle Sizer Spectrometer

COURSES AND WORKSHOPS

May 2015; Cambridge, USA

Go Amazon 2014/5 Science conference. Oral presentation on *Diel and seasonal variations of BVOC in and above an Amazonian rainforest site*.

September 2014; Manaus, Brazil

1^o GoBLE (Go Amazon Boundary Layer Experiment) workshop. Oral presentation on *Diel and seasonal variations of BVOC in and above an Amazonian rainforest site*.

February 2014; Paris, France

Éclaire Winter School: Measurements and modeling of biosphere-atmosphere exchanges of trace gases and aerosols.

March 2012; Manaus, Brazil

Course in Temporal series and complex Networks by Prof. Dr. Fernando Ramos INPE-LAC

May 2011; Lancaster University, UK

Workshop in Biogenic VOC Emissions Models and Their Applications

May 2011; Hyytiälä, University of Helsinki, Finland

7th Aerosol Training Course: Measurements of atmospheric aerosols: Aerosols physics, sampling and measurement techniques.

2008; Fundació UPC (Universitat Politècnica de Barcelona), Spain

Online course on the creation of environmental models using the Vensim Software

PUBLICATIONS

- Werner, C., Fasbender, L., Romek, K., **Yáñez-Serrano, A.M.**, Kreuzwieser, J. Heat waves changes plant carbon allocation into primary and secondary metabolism such as CO₂ and VOC emissions. *New Phytologist*. In review.
- **Yáñez-Serrano, A.M.**, Mahlau, L., Fasbender, L., Byron, J., Williams, J., Kreuzwieser, J., Werner, C. Incorporation of cytosolic pyruvate in isoprene biosynthesis is enhanced under heat stress. *Journal of Experimental Botany*. In review.
- Pfannerstill, E.Y., Nölscher, A.C., **Yáñez-Serrano, A.M.**, Bourtsoukidis, E., Keßel, S., Hanssen, R.H.H., Tsokankunku, A., Wolff, S., Sörgel, M., Sá, M., Araújo, A., Walter, D., Lavrič, J., Dias-Júnior, C.Q., Kesselmeier, J., Williams, J. Total OH Reactivity Changes Over the Amazon Rainforest During an El Niño Event. *Front. For. Glob. Change* 1:12. doi: 10.3389/ffgc.2018.00012, 2018.
- Fasbender, L., **Yáñez-Serrano, A.M.**, Werner, C. Real-time carbon allocation into biogenic volatile organic compounds (BVOCs) and respiratory carbon dioxide (CO₂) traced by PTR-TOF-MS, ¹³CO₂ laser spectroscopy and ¹³C-pyruvate labelling. *Plos ONE*, 13(9): e0204398, doi:10.1371/ journal.pone.0204398, 2018.
- Bourtsoukidis, E., Behrendt, T., **Yáñez-Serrano, A.M.**, Hellén, H., Diamantopoulos, E., Catão, E., Ashworth, K., Pozzer, A., Quesada, C.A., Martins, D.L., Sá, M., Araujo, A., Brito, J., Artaxo, P., Kesselmeier, J., Lelieveld, J., Williams, J. *Nature Communications*, 9: 2226, doi: 10.1038/s41467-018-04658-y, 2018.
- **Yáñez-Serrano, A.M.**, Fasbender, L., Kreuzwieser, J., Dubbert, D., Haberstroh, S., Lobo-do-Vale, R., Caldeira, M.C., Werner, C. Volatile diterpene emission by two Mediterranean Cistaceae shrubs. *Scientific Reports of Nature*, 8, 6855, doi: 10.1038/s41598-018-25056-w, 2018.
- **Yáñez-Serrano, A.M.**, Nölscher, A.C., Bourtsoukidis, E., Alves, E.G., Ganzeveld, L., Bonn, B., Wolff, Sa, M., Yamasoe, M., Williams, J., Andreae, M.O., Kesselmeier, J. Monoterpene chemical speciation in the Amazon tropical rainforest: variation with

- season, height, and time of day at the Amazon Tall Tower Observatory (ATTO). *Atmos. Chem. Phys.* 18, 3403-3418, doi.org/10.5194/acp-18-3403-2018, 2018.
- Artaxo Netto, P.E., de Melo, H., de Brito, J., Sena, E., Rizzo, L.V., Cirino, G.G., **Yañez-Serrano, A.M.** A Amazônia em processo de mudanças ambientais. Chapter 2 of: *Ciência das mudanças climáticas e sua interdisciplinaridade*. Editors: Ambrizzi, T., Jacobi, P.R., Dutra, L.M. Annablume São Paulo, Brazil. 2015.
 - Fuentes, J.D., Chamecki, M., Nascimento dos Santos, R.M., Von Randow, C., Stoy, P.C., Katul, G., Fitzjarrald, D., Manzi, A., Gerken, T., Trowbridge, A., Souza Freire, L., Ruiz-Plancarte, J., Furtunato Maia, J.M., Tóta, J., Dias, N., Fisch, G., Schumacher, C., Acevedo, O., Rezende Mercer, J., **Yañez-Serrano, A.M.** Linking Meteorology, Turbulence, and Air Chemistry in the Amazon Rain Forest. *Bulletin of the American Meteorological Society.* 97,12, 2329-2342, doi: 10.1175/BAMS-D-15-00152.1, 2016.
 - **Yañez-Serrano, A.M.**, Nölscher, A.C., Bourtsoukidis, E., Derstroff, B., Zannoni, Gros, V., Lanza, M., Brito, J., Noe, S.M., House, E., Hewitt, C.N., Langford, B., Nemitz, E., Behrendt, T., Williams, J., Artaxo, P., Andreae, M.O., and Kesselmeier, J. Atmospheric mixing ratios of methyl ethyl ketone (2-butanone) in tropical, boreal, temperate and marine environments. *Atmos. Chem. Phys.* 16, 10965-10984, doi: 10.5194/acp-16-10965-2016, 2016.
 - Alves, E.G., Jardine, K., Tota, J., Jardine, A., **Yañez-Serrano, A.M.**, Karl, T., Tavares, J., Nelson, B., Gu, D., Stavrou, T., Martin, S., Manzi, A., Guenther, A. Seasonality of isoprenoid emissions from a primary rainforest in central Amazonia. *Atmos. Chem. Phys.* 16, 3903–3925, doi: 10.5194/acp-16-3903-2016, 2016.
 - Nölscher, A.C., **Yañez-Serrano, A.M.**, Wolff, S., Carioca de Araujo, A., Lavrič, J.V., Kesselmeier, J., Williams, J. Unexpected seasonality in quantity and composition of Amazon rainforest air reactivity. *Nature Communications* 7 (10383), doi:10.1038/ncomms10383, 2016.
 - Paralo, S.L., Borillo, G.C., Barbosa, C.G.G., Godoi, A.F.L., Yamamoto, C.I., Souza, R.F.L., Andreoli, R.V., Costa, P.S., Almeida, G.P. Manzi, A.O., Pöhlker, C., **Yañez-Serrano, A.M.**, Kesselmeier, J., Godoi, R.H.M. Observations of atmospheric monoaromatic hydrocarbons at urban, semi-urban and forest environments in the Amazon region. *Atmospheric Environment*, 128, 175–184, doi:10.1016/j.atmosenv.2015.12.053, 2016.
 - Williams, J., KeBel, S.U., Nölscher, A.C., Yang, Y., Lee, Y., **Yañez-Serrano, A.M.**, Wolff, S., Kesselmeier, J., Klüpfel, T., Lelieveld, J., Shao, M. Opposite OH reactivity and ozone cycles in the Amazon rainforest and megacity Beijing: Subversion of biospheric oxidant control by anthropogenic emissions. *Atmospheric Environment*, 125 (Part A), 112–118, doi: 10.1016/j.atmosenv.2015.11.007. 2015.
 - Brito, J., Wurm, F., **Yañez-Serrano, A. M.**, Assunção, J.V., Godoy, J.M., Artaxo, P. Vehicular Emission Ratios of VOCs in a Megacity Impacted by Extensive Ethanol Use: Results of Ambient Measurements in São Paulo, Brazil. *Environmental Science and Technology.* 49(19), 11381-11387, doi: 10.1021/acs.est.5b03281, 2015.
 - Andreae, M. O., Acevedo, O. C., Araujo, A., Artaxo, P., Barbosa, C. G. G., Barbosa, H. M. J., Brito, J., Carbone, S., Chi, X., Cintra, B. B. L., da Silva, N. F., Dias, N. L., Dias-Júnior, C. Q., Ditas, F., Ditz, R., Godoi, A. F. L., Godoi, R. H. M., Heimann, M., Hoffmann, T., Kesselmeier, J., Könemann, T., Krüger, M. L., Lavric, J. V., Manzi, A. O., Moran-Zuloaga, D., Nölscher, A. C., Santos Nogueira, D., Piedade, M. T. F., Pöhlker, C., Pöschl, U., Rizzo, L. V., Ro, C.-U., Ruckteschler, N., Sá, L. D. A., Sá, M. D. O., Sales, C. B., Santos, R. M. N. D., Saturno, J., Schöngart, J., Sörgel, M., de Souza, C. M., de Souza, R. A. F., Su, H., Targhetta, N., Tóta, J., Trebs, I., Trumbore, S., van Eijck, A., Walter, D., Wang, Z., Weber, B., Williams, J., Winderlich, J., Wittmann, F., Wolff, S. and **Yañez-Serrano, A. M.**: The Amazon Tall Tower Observatory (ATTO) in the remote Amazon Basin: overview of first results from ecosystem ecology, meteorology, trace gas, and aerosol measurements, *Atmos. Chem. Phys.*, 15, 10723-10776, doi: 10.5194/acp-15-10723-2015.
 - **Yañez-Serrano, A. M.**, Nölscher, A. C., Williams, J., Wolff, S., Alves, E., Martins, G. A. and Bourtsoukidis, E., Brito, J., Jardine, K., Artaxo, P. and Kesselmeier, J.: Diel and seasonal changes of biogenic volatile organic compounds within and above an

- Amazonian rainforest, *Atmos. Chem. Phys.*, 15(x), 3359–3378, doi:10.5194/acp-15-3359-2015, 2015.
- Jardine, K., **Yañez-Serrano, A. M.**, Williams, J., Kunert, N., Jardine, A., Taylor, T., Abrell, L., Artaxo, P., Guenther, A., Hewitt, C. N., House, E., Florentino, A. P., Manzi, A., Higuchi, N., Kesselmeier, J., Behrendt, T., Veres, P. R., Derstroff, B., Fuentes, J. D., Martin, S. T. and Andreae, M. O.: Dimethyl sulfide in the Amazon rain forest, *Global Biogeochemical Cycles*, 29(1), 19–32, doi:10.1002/2014GB004969, 2015.
 - Jardine, K.J., Meyers, K., Abrell, L., Alves, E.G., **Yanez Serrano, A.M.**, Kesselmeier, J., Karl, T., Guenther, A., Vickers, C., Chambers, J.Q. Emissions of putative isoprene oxidation products from mango branches under abiotic stress. *Journal of Experimental Botany*. 64(12), 3697–3709, doi:10.1093/jxb/ert202, 2013.
 - Sjögersten, S.; Llurba, R.; Ribas, A.; **Yanez-Serrano, A.**; Sebastià, M.T. Temperature and Moisture Controls of C Fluxes in Grazed Subalpine Grasslands. *Arctic, Antarctic and Alpine Research*, 44, 239-246, doi: 10.1657/1938-4246-44.2.239, 2012.
 - Jardine, K.; **Serrano, A. M. Y.**; Arneth, A.; Abrell, L.; Jardine, A.; van Haren, J.; Artaxo, P.; Rizzo, L. V.; Ishida, F. Y.; Karl, T.; Kesselmeier, J.; Saleska, S.; Huxman, T. . Within-canopy sesquiterpene ozonolysis in Amazonia. *Journal of Geophysical Research*, 116(D19), D19301, doi:10.1029/2011JD016243, 2011.
 - Jardine, K.; **Yañez Serrano, A.**; Arneth, A.; Abrell, L.; Jardine, A.; Artaxo, P.; Alves, E.; Kesselmeier, J.; Taylor, T.; Saleska, S.; Huxman, T. Ecosystem-scale compensation points of formic and acetic acid in the central Amazon, *Biogeosciences*, 8(12), 3709–3720, doi:2011/12/16, 2011.
 - Jardine, Kolby J.; Monson, Russell K.; Abrell, Leif; Saleska, Scott R.; Arneth, Almut; Jardine, Angela; Ishida, Françoise Yoko; **Serrano, Ana Maria Yanez**; Artaxo, Paulo; Karl, Thomas; Fares, Silvano; Goldstein, Allen; Loreto, Francesco; Huxman, Travis; Within-plant isoprene oxidation confirmed by direct emissions of oxidation products methyl vinyl ketone and methacrolein. *Global Change Biology*, 18(3), 973–984, doi:10.1111/j.1365-2486.2011.02610.x, 2011.

CONFERENCES AND EVENTS

- Gordon Research Conference: Biogenic Hydrocarbons and the Atmosphere: Connecting Volatiles and the Climate System from Leaf to Planet. Poster presentation: *Different Strategies of Tropical Species to Cope with Heat by Adjusting Carbon Uptake and VOC Emissions*. Yañez-Serrano, A.M., Mahlau, L., Fasbender, L., Kreuzwieser, J., Werner, C.
- Gordon Research Seminar: Biogenic Hydrocarbons and the Atmosphere: Building Bridges in Hydrocarbon Research: Understanding Emissions to Impacts. June 9,10th, 2018, Les Diablerets, Switzerland. Invited speaker: *Different Strategies of Tropical Species to Cope with Heat by Adjusting Carbon Uptake and VOC Emissions*. Yañez-Serrano, A.M., Mahlau, L., Fasbender, L., Kreuzwieser, J., Werner, C.
- ILEAPS International Science Conference 2017, Oxford, UK. Oral presentation: *Diterpene and other isoprenoid emissions by Mediterranean Cistaceae shrubs*. Yañez Serrano, A.M., Fasbender, L., Kreuzwieser, J., Dubbert, D., Haberstroh, S., Lobo-do-Vale, R., Caldeira, M.C., Werner, C. Poster presentation: *Measuring and modelling monoterpene chemodiversity at the Amazonian Tall Tower Observatory (ATTO) rainforest site*. Yañez-Serrano, A.M., Nölscher, A.C., Bourtsoukidis, E., Alves, E.G., Ganzeveld, L., Bonn, B., Wolff, S., Yamasoe, M., Williams, J., Andreae, M.O., Kesselmeier, J.
 - o Committee member of the organization of the Early Career Workshop and activities.
 - o Convener of session: “Measuring and modelling BVOCs”.
- AGU Fall Meeting 2016, San Francisco, USA. Poster presentation: *Atmospheric mixing ratios of methyl ethyl ketone (2-butanone) in tropical, boreal, temperate and marine environments*. Yañez-Serrano, A.M., Nölscher, A.C., Bourtsoukidis, E., Derstroff, B., Zannoni, Gros, V., Lanza, M., Brito, J., Noe, S.M., House, E., Hewitt, C.N., Langford, B., Nemitz, E., Behrendt, T., Williams, J., Artaxo, P., Andreae, M.O., and Kesselmeier, J.
- IGAC conference 2016: One atmosphere. Breckenridge, CO, USA, September 2016. Oral presentation: *Monoterpene chemodiversity at the Amazonian Tall Tower Observatory*

- (ATTO) tropical rainforest site. Yañez-Serrano, A.M., Nölscher, A.C., Bourtsoukidis, E., Alves, E.G., Aquino, R., Dias-Junior, C.Q., Tsokankunku, A., Wolff, A.S., Sörgel, M., Yamasoe, M., Sa, M., Ganzeveld, L., Williams, J. and Kesselmeier, J.
- Participation in the Early Career short course.
 - Gordon Research Conference: Natural hydrocarbons in the atmosphere, 2016. Girona, Spain. Poster presentation: *Monoterpene chemodiversity at the Amazonian Tall Tower Observatory (ATTO) tropical rainforest site*. Yañez-Serrano, A.M., Nölscher, A.C., Bourtsoukidis, E., Alves, E.G., Williams, J., Kesselmeier, J.
 - IGAC conference 2014: Atmospheric chemistry in a changing climate. Natal, Brazil, September 2014. Poster presentation: *Diel and seasonal dynamics of BVOC within and above an Amazonian rainforest site*. Yañez-Serrano, A.M., Nölscher, A.C., Wolff, S., Williams, J., Bourtsoukidis, E., Brito, J., Jardine, K., Artaxo, P., Kesselmeier, J.
 - Committee member of the organization of the Young Scientists Program.
 - Gordon Research Conference: Natural hydrocarbons in the atmosphere, 2014. Girona, Spain. Poster presentation: *BVOC profiles at the Amazonian Tall Tower Observatory site*. Yañez-Serrano, A.M., Nölscher, A.C., Wolff, S., Williams, J., Artaxo, P., Kesselmeier, J.
 - AGU Fall Meeting 2013, San Francisco, USA. Oral presentation: *BVOC profiles at the Amazonian Tall Tower Observatory site*. Yañez-Serrano, A.M., Nölscher, A.C., Williams, J., Jardine, K., Wolff, S., Martins, G.A., Artaxo, P., Kesselmeier, J.
 - IGAC conference 2012: Atmospheric chemistry in the Anthropocene. Beijing, China, September 2012. Presenting the poster: *Emissions of Dimethyl Sulfide from the Amazonian "Green Ocean"*. Yañez Serrano, A.M., Jardine, K., Taylor, T., Kesselmeier, J., Saleska, S., Abrell, L., Rizzo, L.V., Jiang, X., Wiedemann, K., Guenther, A., Karl, T., Florentino, A.P. and Artaxo, P.
 - Seminar on BVOC at Max Planck Institute for Chemistry, Mainz, Germany. Jan 2012. Seminar given of *Within-canopy Sesquiterpene Ozonolysis in Amazonia*. Jardine, K., Abrell, L., Yañez Serrano, A.M., Arneth, A., Ishida, F.Y., Huxman, T., Saleska, S., Jardine, A., Karl, T., and Artaxo, P.
 - Brazilian National week of Science and Technology 17-21 Oct, 2011: lecture on BVOC at UniNorte University, Manaus. Yañez-Serrano, A.M.
 - ILEAPS International Science Conference 2011. Garmisch-Partenkirchen, Germany. Orally presenting: *Direct observations of Sesquiterpene Ozonolysis in Amazonia*. Jardine, K., Abrell, L., Yañez Serrano, A.M., Arneth, A., Ishida, F.Y., Huxman, T., Saleska, S., Jardine, A., Karl, T., and Artaxo, P.
 - Seminar on BVOC at Leeds University, UK. May 2011. Seminar given of *Within-canopy Sesquiterpene Ozonolysis in Amazonia*. Jardine, K., Abrell, L., Yañez Serrano, A.M., Arneth, A., Ishida, F.Y., Huxman, T., Saleska, S., Jardine, A., Karl, T., and Artaxo, P.
 - European Geoscience Union General Assembly 2011, Vienna, Austria. Poster presentation: *Direct observations of Sesquiterpene Ozonolysis in Amazonia*. Jardine, K., Abrell, L., Yañez Serrano, A.M., Arneth, A., Ishida, F.Y., Huxman, T., Saleska, S., Jardine, A., Karl, T., and Artaxo, P.

NETWORKS

- Committee member of the ILEAPS Early Career Global Network. Former Chair.
- Committee member of the Latin America Network for Early Career scientists in Earth System Science.
- Earth Science Women Network.
- VOCsNet.
- YESS.
- Future Earth.

PEER REVIEW

- Atmospheric Physics and Chemistry journal.
- Frontiers: Forest and Climate Change