

July 10th, 2021

Personal Data



Alexandre Caseiro

Neue Mainzer Str 94, 55129 Mainz, Germany

+351 938677192 | +49 15753221627 | alex.caseiro@gmail.com

citizenship: portuguese

Date and place of birth: May 24th, 1979 in Liège, Belgium

General quality indicators of scientific research

PhD thesis (2008): Chemical composition of the european aerosol <https://ria.ua.pt/handle/10773/704>

Patent: 1

Datasets with *doi*: 2

Articles published in peer-reviewed journals: 40 (5 as first author)

Currently 4 publications under revision (1 as first author)

Currently working on 6 publications (3 as first author)

h-index (Google scholar): 26

i10-index (Google scholar): 29

Co-author of

book chapters: 1

Scientific-technical reports: 11

Works submitted at Conferences as presenting or first author: 37

Works submitted at Schools, Workshops and Seminars: 2

Invited speaker in Schools, Workshops and Seminars: 3

MSc thesis evaluation board: 4

PhD thesis evaluation board: 1

BSc courses taught: 9

BSc final works supervised: 2

Academic education and training

July 6 – 11, 2014	COST action ES1004 "European framework for online integrated air quality and meteorology modelling (EuMetChem)", Young Scientist summer School, Aveiro, Portugal, 3 ECTS
April 22, 2014	Good Practices Contributing to an Effective National GHG Inventory System, World Resources Institute, Webinar ID: 395-239-071
October 21 – 25, 2013	Course on Biofuels and Sustainability, Department of Environment and Planning, University of Aveiro, Portugal
July 25 – August 21, 2013	Applied Remote Sensing Training – Air Quality (online, 5 sessions), NASA – Goddard Space Flight Center
September 10 – 12, 2012	Summer Institute on Global Environmental Issues – FLAD, Lisbon, Portugal
November 9 – 10, 2011	Block Course on Remote Sensing of Air Contaminants, Center of Environment and Sustainability Research (CENSE) – Faculty of Science and Technology, Universidade Nova de Lisboa, Portugal
August 16 – 19, 2009	Wilhelm and Else Heraeus Seminar – Determination of Atmospheric Aerosol Properties Using Satellite Measurements, Physikzentrum Bad Honnef, Germany.
June 23 – 28, 2008	Summer School on Organic Aerosols, Gothenburg Chalmers Uni., Sweden.
February 2004 – November 2008	PhD on atmospheric aerosol (<i>Composition of the european atmospheric aerosol</i>) at the University of Aveiro (practical work at the Technical University of Vienna).
September 2006	PEER/METIER training course on Remote Sensing of the Atmosphere, European Commission Joint Research Center, Institute for Environment and sustainability, Ispra, Italy.
September 1997 – September 2003	Graduate studies on environmental engineering, University of Aveiro, 5 yrs. Final thesis: Responsible for SO ₂ , NO _x , O ₃ , CO as well as some PM ₁₀ /PM _{2.5} measurements and data handling for the SAPPHIRE and CARBOSOL european projects. (October 2002 – September 2003) Erasmus exchange student, Tampere University of Technology, Finland. (August 2001 – February 2002)

Professional experience and capabilities

August 2019 – present	Researcher at the Institute for Advanced Sustainability Studies, Potsdam, Germany. Main project: ClimPol (https://climpol.iass-potsdam.de/) – focusing on the connections between air quality and climate change, working at the science-policy-society interface. Main tasks: air quality measurements and data analysis, software development.
October 2017 – August 2019	Post-Doc researcher at the Max Planck Institute for Chemistry, Mainz, Germany. Main project: FireSense (http://www.mpic.de/forschung/atmosphaerenchemie/gruppe-kaiser/firesense.html) – Development of an improved fire information system by integrating sensor derived data from drones, planes and satellites with improved algorithms.

	<p>Main tasks: field campaign management, drone operation, image (IR and Visible) analysis, software and algorithm development, data analysis and statistics, report and scientific publication writing.</p>
March 2015 – September 2017	<p>Post-Doc researcher at the Max Planck Institute for Chemistry, Mainz, Germany.</p> <p>Main project: GFS3 (http://www.mpic.de/forschung/atmosphaerenchemie/gruppe-kaiser/gasflares.html) – Development of a methodology to detect gas flares and compute their emissions using remote sensed data (BIRD, FireBIRD, AATSR and SLSTR).</p> <p>Main tasks: remote sensing data validation (member of the Sentinel-3 Validation Team) and processing (NIR to TIR Level 1 to Level 2 and 3), software and algorithm development, data analysis and statistics, report and scientific publication writing.</p>
September 2011 – September 2012	<p>Guest associate professor at the Tomar Technology College (Polytechnic Institute of Tomar) (ESTT-IPT).</p> <p>Teaching <i>Environmental Management Systems, Atmospheric Pollution and Gaseous Effluents Treatment Systems</i> to the Environmental and Biological Engineering Course.</p> <p>Main tasks: field campaign management, drone operation, image (IR and Visible) analysis, software and algorithm development, report and scientific publication writing.</p>
February 2011 – September 2014	<p>Engineer at UVW, Environmental Systems Modelling Centre.</p> <p>Conducting atmospheric dispersion / air quality studies using a diversity of indoor, local and regional dispersion models. Development of task automation scripts. Review and adaptation of legacy software (FORTRAN). Environmental risk assessment. Development of tools to evaluate air quality based on remote sensing data (Level 1). GIS operation. Data analysis and statistics: air quality monitoring and meteorology, climate model outputs.</p>
January 2009 – February 2011	<p>Post-Doc grant from the Portuguese foundation for science and technology.</p> <p>Development of a methodology to determine organic S and N compounds in the atmospheric aerosol.</p> <p>Participation (atmospheric sample analysis, field work) in the projects CV-Dust, PAHLIS, BIOEMI, EUCAARI, SINPHONIE.</p>
September 2008 – September 2009	<p>Associate professor at the Technology and Management College of Oliveira do Hospital (Polytechnic Institute of Coimbra) (ESTGOH-IPC).</p> <p>Teaching <i>Hydraulics, Sustainable Construction, Waste Management and Environment and Nature Protection</i> to the Civil Engineering course; as well as <i>Organizations Management</i> to the Informatics course.</p>
January 2008 – December 2008	<p>PhD grant from the Portuguese foundation for science and technology.</p>
May – December 2007	<p>Scientific Research grant, University of Aveiro.</p> <p>Responsible for Ion Chromatography measurements on atmospheric aerosols. Participation (atmospheric sample analysis, field work) in the projects PAHLIS, BIOEMI, EUCAARI.</p>
March 2006 – March 2007	<p>University assistant at the Technical University of Vienna, Institute of Chemical Technologies and Analytics, working groups of Atmospheric Analytics and Environmental Analytical Chemistry.</p>

	Responsible for the Ion Chromatography exercise of the Analytical Chemistry course.
	Responsible for the analysis of saccharidic compounds in the atmospheric aerosol for the „AQUELLA“ and „CARBOSOL“ projects (HPAE-PAD for carbohydrates, enzymatic determination for cellulose).
	Collaboration in the „AEROWOOD“ project (Paul Scherrer Institut, Villigen, Switzerland).
May 2005-February 2006	Project assistant at the Technical University of Vienna, Institute of Chemical Technologies and Analytics, working groups of Atmospheric Analytics and Environmental Analytical Chemistry.
	Responsible for the analysis of saccharidic compounds in the atmospheric aerosol for the „AQUELLA“ and „CARBOSOL“ projects (HPAE-PAD for carbohydrates, enzymatic determination for cellulose).
May 2004-April 2005	Marie Curie Scholarship (from the EU Commission) at the Technical University of Vienna, Institute of Chemical Technologies and Analytics, working groups of Atmospheric Analytics and Environmental Analytical Chemistry.
	Responsible for the analysis of saccharidic compounds in the atmospheric aerosol for the „AQUELLA“ and „CARBOSOL“ projects (HPAE-PAD for carbohydrates, enzymatic determination for cellulose).
October 2003 – January 2004	Starting Scientific Research grant, University of Aveiro.
	Responsible for SO ₂ , NO _x , O ₃ , CO as well as some PM ₁₀ /PM _{2.5} measurements and data handling for the „SAPPHIRE“ European project.

Skills and competences

Technical	<p>Experience with atmospheric dispersion models, indoor air quality models, meteorological prognostic and environmental risk: TAPM, AERMOD, CALPUFF, AUSTAL2000, CALROADS, SLAB, EDMS, CONTAM and ALOHA.</p> <p>Experience with atmospheric pollutants analysers, aerosol sampling systems and their data acquisition systems.</p> <p>Experience with ion chromatography systems, particularly with High pH Anion Exchange Chromatography – Pulsed Amperometric Detection. Good knowledge of chromatography software: Chromeleon (Dionex) and PeakFit (SySTAT).</p> <p>Experience with delignification and saccharification enzymatic methods and XAD/DAX resins.</p> <p>GIS: some ArcGIS and QuantumGIS, but mainly R and GDAL/OGR.</p> <p>Experience with multivariate data analysis (Principal Components Analysis/ Multilinear Regression and Postive Matrix Factorization) and with the model Chemical Mass Balance.</p> <p>Basic knowledge of SPSS, good knowledge of the R statistical software.</p> <p>Experience of remote sensing data processing and manipulation (Levels 1, 2 and 3) and GCM outputs manipulation under diverse formats (grib, NetCDF, HDF, ...), mainly with R, python and SNAP.</p>
Languages	<p>French and Portuguese (first languages); English (very good oral and writing skills); German and Spanish (good oral and writing skills); Dutch (regular); Greek, Finnish and Esperanto (basic).</p>

IT Good knowledge of *moodle* tools.

Good knowledge of Windows® tools (MS Word, Excel, Access/SQL, ...); advanced knowledge of Linux systems (bash, zsh, etc.); good knowledge of LaTeX.

Programming and scripting:

R: statistical testing, GIS (*raster*, *sp*, *rgeos*, *rgdal*, ...), data analysis, visualization and modelling, literate programming (*knitr*);

bash / zsh and DOS batch: task automation, simple data manipulation (with *grep*, *(g)awk*, *sed*, ...), GIS (with *GDAL/OGR*);

python: manipulation, analysis and visualization of large datasets (scientific programming with *scipy/numpy*, *matplotlib*, parallel processing and object-oriented programming, among others), image processing (*openCV*, *imageio*), XML processing (*lxml*).

perl: data manipulation;

pascal and *FORTRAN*: basic knowledge.

Git: good knowledge for versioning.

LaTeX: good knowledge.

Academic year 2002/2003	Environmental Engineering fifth year student's representative, U. of Aveiro.
December 2000 – April 2004	Portuguese Red Cross volunteer in Marinha, Esposende (Portugal).
April 2000	Participation in the ESGIRA MARIA project: Integrated Management System for the Aveiro Lagoon as environmental monitor.

Industrial and intellectual property

Title of registered industrial property	SLSTR Nightfire: Hot Spot Charakterisierung mittels Beobachtungen de SLSTR Instruments auf dem Copernicus Sentinel-3 Satelliten
Inventors/authors/obtainers	Alexandre Caseiro; Johannes W. Kaiser
Country of inscription	Germany

Science-Society activities

Since 2021	Collaboration with Teachers For Future Rhineland-Pfalz: Preparation and review of climate-related teaching material (http://aktionswocheklima.net)
------------	---

Scientific Production

Scientific software, a selection (1)	<i>EFcalculatoR</i> : a software to compute road emission factors following the EMEP/EEA methodology, in preparation, Journal of Open Source Software https://github.com/AlexCaseiro1979/EFcalculatoR
Book chapter (1, co-author)	<i>Forest fires research: beyond burnt area statistics</i> . Célia Alves, Ana Vicente, Teresa Nunes, Cátia Gonçalves, Patrícia Fernandes, Cristina Monteiro, Alexandre Caseiro, Fátima Mirante, Margarita Evtugina, Casimiro Pio. <i>Forest Fire Emissions</i> . Amorim J.H., Keizer J.J., Miranda A.I., Monaghan K. (Editors). pp. 27 - 32. 2011. ISBN 978-972-789-345-4
Publications under revision for peer-reviewed journals (4)	<i>Learning from the COVID-19 Lockdown: Observations and modelling to support understanding policies to reduce NO₂, a case study in Berlin</i> . Erika

von Schneidemesser, Bheki Sibiyi, Alexandre Caseiro, Tim Butler, Mark G. Lawrence, Joana Leitao, Aurelia Lupascu, Pedro Salvador. Under revision for Atmospheric Environment X

Implementing sustainable transportation in European cities: an inter- and transdisciplinary case study of Berlin's pop-up cycling infrastructure. Sophia Becker, Dirk von Schneidemesser, Alexandre Caseiro, Katharina Götting, Seán Schmitz, Erika von Schneidemesser. Under review for Case Studies on Transport Policy

APExpose_DE: An air quality exposure dataset for Germany 2010–2019. Alexandre Caseiro and Erika von Schneidemesser. Under review for Scientific Data

Unraveling a black box: An open-source methodology for the field calibration of small air quality sensors. Seán Schmitz, Sherry Towers, Guillermo Villena, Alexandre Caseiro, Robert Wegener, Dieter Klemp, Ines Langer, Fred Meier, and Erika von Schneidemesser. Under review for Atmospheric Measurement Techniques 10.5194/amt-2020-489

Publications in peer-reviewed journals (40)

Do new bike lanes impact air pollution exposure for cyclists? – A case study from Berlin. Seán Schmitz, Alexandre Caseiro, Andreas Kerschbaumer, Katja Grünow, and Erika von Schneidemesser. Environmental Research Letters, accepted

Gas flaring activity and black carbon emissions in 2017 derived from Sentinel-3A SLSTR. Alexandre Caseiro, Berit Gehrke, Gernot Rücker, David Leimbach, and Johannes W. Kaiser. Earth System Science Data 12 (3), 2137-2155, 10.5194/essd-2019-99, 2020

Gas Flaring: A review focused on its analysis from space. M. Faruolo, A. Caseiro, T. Lacava and J. W. Kaiser. IEEE Geoscience and Remote Sensing Magazine 9 (1), 258-281, doi: 10.1109/MGRS.2020.3007232, 2020

Persistent hot spot detection and characterisation using SLSTR. Alexandre Caseiro, Gernot Rücker, Joachim Tiemann, David Leimbach, Eckehard Lorenz, Olaf Frauenberger, Johannes W. Kaiser. Remote Sensing, 10 (7), 1118, 2018

Road tunnel, roadside and urban background measurements of aliphatic compounds in size-segregated particulate matter. Alves A.C., Oliveira C., Martins N., Mirante F., Caseiro A., Pio C., Matos M., Silva H.F., Oliveira C., Camões F. Atmospheric Research. 168, 139-148, 2016

Impact of wood burning on indoor PM_{2.5} in a primary school in rural Portugal. Canha N., Almeida S.M., Freitas M.D., Wolterbeek H.T., Cardoso J., Pio C., Caseiro A. Atmospheric Environment. 94, 663-670, 2014

Size fractionated aerosol composition at roadside and background environments in the Madrid. Mirante F., Salvador P., Pio C., Alves C., Artiñano B., Caseiro A., Revueta M.A. Atmospheric Research. 138, 278-292, 2014

Impact of Maritime Air Mass Trajectories on the Western European Coast Urban Aerosol. Almeida S.M., Silva A.I., Freitas M.C., Dung H.M., Caseiro A., Pio C.A. Journal of Toxicology and Environmental Health-Part a-Current Issues. 76, 4-5, 252-262, 2013

Size-segregated chemical composition of aerosol emissions in an urban road tunnel in Portugal. Pio C., Mirante F., Oliveira C., Matos M., Caseiro A., Oliveira C., Querol X., Alves C., Martins N., Cerqueira M., Camões F., Silva H., Plana F. Atmospheric Environment. 71, 15-25, 2013

Variations in wood burning organic marker concentrations in the

atmospheres of four European cities. Alexandre Caseiro and César Oliveira
Journal of Environmental Monitoring. 14, 2261-2269, 2012

Burn Wood Influence on Outdoor Air Quality in a Small Village – Foros de Arrão, Portugal. Canha N., Freitas M.C., Almeida-Silva M., Almeida S.M., Dung H.M., Dionísio I., Cardoso J., Pio C.A., Caseiro A., Verburg T.G., Wolterbeek H.Th. Journal of Radioanalytical and Nuclear Chemistry. 291, 83-88, 2012

Indoor and outdoor characterisation of organic and inorganic compounds in city centre and suburban elementary schools of Aveiro, Portugal. Pegas P.N., Nunes T., Alves C.A., Silva J.R., Vieira S.L.A., Caseiro A., Pio C. Atmospheric Environment. 55, 80-89, 2012

Summer 2009 wildfires in Portugal: Emission of trace gases and aerosol composition. Célia Alves, Ana Vicente, Teresa Nunes, Cátia Gonçalves, Ana Patrícia Fernandes, Fátima Mirante, Luís Tarelho, Ana M. Sánchez de la Campa, Xavier Querol, Alexandre Caseiro, Cristina Monteiro, Margarita Evtyugina, Casimiro Pio Atmospheric Environment, 45, 641-649, 2011

Experimental evidence for a significant contribution of cellulose to indoor aerosol mass concentration. Mário Cerqueira, Daniel Marques, Alexandre Caseiro, Casimiro Pio Atmospheric Environment, 44, 867-871, 2010

Smoke emissions from biomass burning in a Mediterranean shrubland. Alves C.A., Gonçalves C., Pio C.A., Mirante F., Caseiro A., Tarelho L., Freitas M.C., Viegas D.X. Atmospheric Environment. 44, 3024-3033, 2010.

Road Traffic Impact on urban Atmospheric Aerosol loading at Oporto, Portugal. Oliveira C., Pio C. A. , Caseiro A. , Santos P., Nunes T., Mao H., Luahana L., Sokhi R. Atmospheric Environment. 44(26), 3147-3158, 2010.

Characterisation of PM10 emissions from wood stove combustion of common woods grown in Portugal. Gonçalves C., Alves C., Evtyugina M., Mirante F., Pio C., Caseiro A., Schmidl C., Bauer H., Carvalho F. Atmospheric Environment. 44, 4474-4480, 2010.

Major sources of PM2.5 organic aerosols in Europe: Predominance of biomass burning and secondary organic aerosols (SOA). Gelencsér A., May B., Simpson D., Sanchez-Ochoa A., Kasper-Giebl A., Puxbaum H., Caseiro A., Pio C., Legrand M. Geochimica et Cosmochimica Acta, 73(13):A425-A425, 2009

Quantifying emissions of primary biological aerosol particle mass in Europe. W. Winiwarter, H. Bauer, A. Caseiro and H. Puxbaum Atmospheric Environment, 43(7):1403-1409, 2009

Application of the integrating sphere method to separate the contributions of brown and black carbon in atmospheric aerosols Anna Wonaschütz, Regina hitzenberger, Heidi Bauer, Parissa Pourcesmaeil, Barbara Klatzer, Alexandre Caseiro and Hans Puxbaum. Environmental Science and Technology, 43(4):1141-1146, 2009

Wood Burning impact on PM10 in three Austrian regions. Alexandre Caseiro, Heidi Bauer, Christoph Schmidl, Casimiro A. Pio, Hans Puxbaum Atmospheric Environment, 43:2186-2195, 2009

Evaluating children exposure to air pollutants for an epidemiological study. Almeida S.M., Freitas M.C., Repolho C., Dionísio I., Dung H.M., Pio C.A., Alves C., Caseiro A., Pacheco A.M.G. Journal of Radioanalytical Nuclear Chemistry, 280: 405-409, 2009

Characterizing air particulate matter composition and sources in Lisbon, Portugal. Almeida S.M., Freitas M.C., Repolho C., Dionísio I., Dung H.M., Caseiro A., Alves C., Pio C.A., Pacheco A.M.G. Journal of Radioanalytical

and Nuclear Chemistry, 281, 215-218, 2009

Characterisation of the seasonal exposure to air pollutants for a respiratory epidemiological study. Freitas, M.; Almeida, S.; Pacheco, A.; Dionísio, I.; Repolho, C.; Caseiro, A.; Dung, H.; Pio, C. & Alves, C. Journal of Radioanalytical and Nuclear Chemistry, 281, 219-223, 2009

Association between monthly-reported rhinitis by children from basic schools and monthly-averaged air pollutants, at Lisbon (Portugal). M. C. Freitas, I. Dionísio, D. G. Beasley, S. M. Almeida, H. M. Dung, C. Repolho, A. M. G. Pacheco, A. Caseiro, C. A. Pio and C. Alves Journal of Radioanalytical and Nuclear Chemistry, 282 (1), 15-20, July 2009

A comparison of new and classic methods to estimate the contribution of wood smoke at different sites in Switzerland A.S.H. Prevot, J. Sandradewi, M.R. Alfarra, S. Szidat, V.A. Lanz, N. Perron, A. Caseiro, A. Kasper-Giebl, H. Puxbaum, U. Baltensperger Chemical Engineering Transactions, Vol 16, 367-369, 2008

Chemical characterisation of fine particle emissions from woodstove combustion of common woods growing in mid-European Alpine regions. Christoph Schmidl, Iain L. Marr, Alexandre Caseiro, Heidi Bauer, Anne Kasper-Giebl and Hans Puxbaum Atmospheric Environment, Volume 42(1):126-141, 2008

Temporal patterns of n-alkanes at traffic exposed and suburban sites in Vienna. Petra Kotianová, Hans Puxbaum, Heidi Bauer, Alexandre Caseiro, Iain L. Marr and Gabriel Čík Atmospheric Environment, Volume 42(13):2993-3005, 2008

Source attribution of submicron organic aerosols during wintertime inversions by advanced factor analysis of aerosol mass spectra. Lanz VA, Alfarra MR, Baltensperger U, et al. Environmental Science and Technology Volume: 42(1):214-220, 2008

Comparison of several wood smoke markers and source apportionment methods for wood burning particulate mass. Sandradewi J., Prévôt A.S.H., Alfarra M.R., Szidat S., Wehrli M.N., Ruff M., Weimer S., Lanz V.A., Weingartner E., Perron N., Caseiro A., Kasper-Giebl A., Puxbaum H., Wacker L., Baltensperger U. Atmospheric Chemistry and Physics Discussions. 8(2):8091-8118, 2008

Chemical composition of atmospheric aerosols during the 2003 summer intense forest fire period. Pio C.A., Legrand M., Alves C.A., Oliveira T., Afonso J., Caseiro A., Puxbaum H., Sanchez-Ochoa A., Gelencser A. Atmospheric Environment, Volume 42(32):7530-7543, 2008

Quantifying Source Contribution to Ambient Particulate Matter in Austria with Chemical Mass Balance Receptor Modeling. Caseiro A., Bauer H., Marr I., Pio C., Puxbaum H., Simeonov V. Air Pollution Modeling and its Application XIX – NATO Science for Peace and Security Series C: Environmental Security, 711-712, 2008

Air quality and organic compounds in aerosols from a coastal rural area in the Western Iberian Peninsula over a year long period: Characterisation, loads and seasonal trends. Tiago Oliveira, Casimiro Pio, Célia Alves, Armando Silvestre, Margarita Evtugina, Joana Afonso, Alexandre Caseiro and Michel Legrand. Atmospheric Environment 41(17):3631-3643, 2007.

Modeling Carbonaceous Aerosol over Europe. Analysis of the CARBOSOL and EMEP EC/OC campaigns. David Simpson, Karl Yttri, Zbigniew Klimont, Kaarle Kupiainen, Alexandre Caseiro, Andras Gelencser, Casimiro Pio, Hans Puxbaum and Michel Legrand Journal of Geophysical Research, 112, D23S14, 2007

Source apportionment of PM2.5 organic aerosol over Europe: primary/secondary, natural/ anthropogenic, fossil/biogenic origin. András Gelencsér, Barbara May, David Simpson, Asunción Sánchez-Ochoa, Anne Kasper-Giebl, Hans Puxbaum, Alexandre Caseiro, Casimiro Pio, Michel Legrand *Journal of Geophysical Research*, 112, D23S04, 2007.

Levoglucosan levels at background sites in Europe for assessing the impact of biomass combustion on the european aerosol background. Hans Puxbaum, Alexandre Caseiro, Asunción Sánchez-Ochoa, Anne Kasper-Giebl, Magda Claeys-Maenhaut, András Gelencsér, Michel Legrand, Susanne Preunkert, Casimiro Pio *Journal of Geophysical Research*, 112, D23S05, 2007.

Climatology of aerosol composition (organic versus inorganic) at nonurban sites on a west-east transect across Europe. C. A. Pio, M. Legrand, T. Oliveira, J. Afonso, C. Santos, A. Caseiro, P. Fialho, F. Barata, H. Puxbaum, A. Sanchez-Ochoa, A. Kasper-Giebl, A. Gelencsér, S. Preunkert, and M. Schock *Journal of Geophysical Research*, 112, D23S05, 2007.

Determination of saccharides in atmospheric aerosol using anion-exchange high-performance liquid chromatography and pulsed amperometric detection. Alexandre Caseiro, Iain L. Marr, Magda Claeys, Anne Kasper-Giebl, Hans Puxbaum, Casimiro A. Pio *Journal of Chromatography A*, 1171, 37-45, 2007.

Composition and source apportionment of atmospheric aerosols in Portugal during the 2003 summer intense forest fire period. Pio, Casimiro; Alves, Célia; Oliveira, Tiago; Afonso, Joana; Caseiro, Alexandre; Kasper-Giebl, Anne; Preunkert, S.; Legrand, Michel; Gelencsér, András *WIT Transactions on Ecology and the Environment*, 101, 45-57, 2007.

Determination of organic wood smoke markers in aerosol samples. Petra Kotianova, Alexandre Caseiro, Barbara Rollinger, Hans Puxbaum *CHEMICKE LISTY*. 100 - 8, pp. 6L. 2006

Datasets with DOI (2) GFlaringS3 - Global Gas Flaring activity and Black Carbon emissions. Doi: 10.25326/19 <https://permalink.aeris-data.fr/GFlaringS3>

APExpose_DE. Doi: 10.5281/zenodo.4557130
<https://zenodo.org/record/4557130>

Scientific-technical reports, a selection (11) von Schneidemesser, E., Schmitz, S., & Caseiro, A.(2021). Mobility Policy and Air Quality. The effect of a new bike lane and community space on air pollution: a real-world experiment in Berlin / Mobilitätspolitik und Luftqualität. Der Effekt eines neuen Radweges und einer Spielstrasse auf die Luftverschmutzung: ein Real-experiment in Berlin. Potsdam: Institute for Advanced Sustainability Studies (IASS). https://publications.iass-potsdam.de/pubman/item/item_6001020
https://publications.iass-potsdam.de/pubman/item/item_6001022

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Marcus Sageder; Hans Puxbaum. "AQUELLA" *Niederösterreich Bestimmung von Immissionsbeiträgen in Feinstaubproben*. 23/04/2009.

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Hans Puxbaum. "AQUELLA" *Knittelfeld Bestimmung von Immissionsbeiträgen in*

Feinstaubproben in Knittelfeld. 02/03/2009.

Nicole Jankowski; Marcus Sageder; Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Carlos Ramirez-Santa Cruz; Andreas Dattler; Lorena Andrade-Sanchez; Hans Puxbaum. *"AQUELLA" Linz - Oberösterreich Aerosolquellenanalyse für Linz - Oberösterreich. 19/01/2009.*

Alexandre Caseiro; Andrius Garbaras; Esther Coz; Mark Hammonds. Off-line analysis of organic aerosols. 09/2008. Available on-line at: https://aerosolschool.web.psi.ch/gothenburg_2008/Group_reviews/OfflineInstrumentsOrganicAerosols.pdf

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Marcus Sageder; Hans Puxbaum. *"AQUELLA" Kärnten/Klagenfurt Aerosolquellenanalysen für Kärnten PM10-Filteranalysen nach dem „AQUELLA-Verfahren“. 28/12/2007.*

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Marcus Sageder; Hans Puxbaum. *"AQUELLA" Salzburg Aerosolquellenanalyse für Salzburg. 05/12/2007.*

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Hans Puxbaum. *"AQUELLA" Hartberg Bestimmung von Immissionsbeiträgen in Feinstaubproben. 17/08/2007.*

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Hans Puxbaum. *"AQUELLA" Köflach Bestimmung von Immissionsbeiträgen in Feinstaubproben. 17/08/2007.*

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Hans Puxbaum. *"AQUELLA" Steiermark Bestimmung von Immissionsbeiträgen in Feinstaubproben. 17/08/2007.*

Heidi Bauer; Iain L. Marr; Anne Kasper-Giebl; Andreas Limbeck; Alexandre Caseiro; Marcus Handler; Nicole Jankowski; Barbara Klatzer; Petra Kotianova; Parissa Pouresmaeil; Christoph Schmidl; Marcus Sageder; Hans Puxbaum. *"AQUELLA" Wien Bestimmung von Immissionsbeiträgen in Feinstaubproben. 31/12/2006*

Communications, a selection
(18)

A global analysis of gas flaring activity using Sentinel-3A SLSTR G. Ruecker, A. Caseiro, A. Soszynska, B. Gehrke, D. Leimbach, J. Kaiser, E. Lorenz, O. Frauenberger, ESA/EUMETSAT Sentinel-3A Sixth Validation Team Meeting 2020, Darmstadt, Germany

The Southern European fire season 2017 as seen by the Copernicus Atmosphere Monitoring Service Johannes W. Kaiser, Imke Hüser, Mark Parrington, Johannes Flemming, Alexandre Caseiro, 8th International Conference on Forest Fire Research 2018, Coimbra, Portugal.

Estimation of the gas flaring emissions using Sentinel-3A's SLSTR Alexandre Caseiro, Johannes W. Kaiser, Berit Gehrke, Gernot Rücker, Joachim Tiemann, David Leimbach, DLR Symposium Neue Perspektiven

der Erdbeobachtung 2018, Köln, Germany

Monitoring of gas flaring using Sentinel-3 SLSTR Alexandre Caseiro, Johannes W. Kaiser, Gernot Rücker, Joachim Tiemann, David Leimbach, ESA/EUMETSAT Sentinel-3A Fourth Validation Team Meeting 2018, Darmstadt, Germany

Gas flaring detection, characterisation and emissions assessment from Sentinel-3 SLSTR Alexandre Caseiro, Johannes W. Kaiser, Gernot Ruecker, Joachim Tiemann, David Leimbach, Eckehard Lorenz, 18th GEIA (Global Emissions Initiative) conference, 2017, Hamburg, Germany.

Gas flare detection with Sentinel-3, including night-time acquisition in S1-S4. Alexandre Caseiro, Gernot Rücker, Johannes W. Kaiser, Eckehart Lorenz, Olaf Frauenberger, ESA/EUMETSAT Sentinel-3A Validation Team Meeting 2017, Frascati, Italy.

Chasing gas flares with SLSTR. Alexandre Caseiro, Gernot Rücker, Eckehart Lorenz, Johannes W. Kaiser, ESA Sentinel-3A Expert Users Meeting 2016, Frascati, Italy.

Identification of gas flares using FireBIRD data in combination with Sentinel-3. Alexandre Caseiro, Johannes W. Kaiser, Angelika Heil, Gernot Rücker, DLR First Scientific FireBIRD Workshop 2015 Oberpfaffenhofen, Germany.

O Ambiente em Museus – A Modelação da Qualidade do Ar exterior. Alexandre Caseiro, Processos de Musealização. Um seminário de Investigação Internacional. – Qualidade do Ar interior e Previsão do Risco de Dano para as Coleções e para a Saúde Ocupacional 2014. Porto, Portugal. ISBN: 978-989-8648-47-1

A detecção remota e a georreferenciação como ferramentas fundamentais no processo de modelação de sistemas ambientais. Alexandre Caseiro, IV Encontro de Sistemas de Informação Geográfica 2013. Castelo Branco, Portugal

Seleção do Modelo de dispersão “fit for purpose”. Alexandre Caseiro, APEA – Seminário de Formação Avançada “Modelação da Qualidade do Ar”. 2013. Lisboa, Portugal.

Métodos de Validação dos Modelos de Dispersão. Alexandre Caseiro, APEA – Seminário de Formação Avançada “Modelação da Qualidade do Ar”. 2013. Lisboa, Portugal.

Wood burning contribution to PM₁₀ in three Austrian cities Alexandre Caseiro, Summer School on Organic Aerosol 2008. Gothenburg, Sweden.

Contribuição da queima de madeira no aerossol Europeu. Alexandre Caseiro, Casimiro Pio, Hans Puxbaum, Anne Kasper-Giebl, Heidi Bauer, Christoph Schmidl, 9^a Conferência Nacional do Ambiente, 2007, Aveiro, Portugal. ISBN: 978-972-789-230-3

Contribution of Anhydrosugars and cellulose in PM₁₀ in Vienna. A. Caseiro, C. Pio, A. Kasper-Giebl, H. Bauer and H. Puxbaum, European Aerosol Conference 2005, Ghent, Belgium. ISBN: 9080915939

Carbohydrate analysis in atmospheric aerosol. A. Caseiro, 8th International school of ion chromatography, 2005, Rogla, Slovenia.

Tratamento de efluentes gasosos com carvão activado. Caseiro, A. F. F., Andrade, R.M.M., Alexandre, J.L., Jornadas do Mar 2002 – Pedro Nunes: Novos Saberes na Rota do Futuro, Escola Naval, Alfeite, Portugal. ISBN: 972980981x

Quinhentos anos de benefício? Paiva, T. H. E., Caseiro, A. F. F., Jornadas

do Mar 2000 – Dos mares de Cabral ao Oceano da Língua Portuguesa, Escola Naval, Alfeite, Portugal. ISBN: 972-98098-1-X

Posters, a selection (19)

Performance characterization of PurpleAir PM monitors in Berlin and Potsdam, Germany. Caseiro, Alexandre; Schmitz, Seán; Venkatraman Jagatha, Janani; Schneider, Christoph; von Schneidemesser, Erika, European Aerosol Conference 2020, Aachen, Germany.

Global gas flaring activity and associated black carbon emissions (2017). Alexandre Caseiro, Berit Gehrke, Gernot Rücker, David Leimbach, Johannes W. Kaiser. 19th GEIA (Global Emissions Initiative) conference, 2020.

FireSense – Entwicklung satelliten-basierter Web- und Handy-Apps für Vegetationsfeuer J.W. Kaiser, G. Rücker, A. Caseiro, B. Gehrke, W. Wiedemann, S. Pless, M.J. Wooster, J.G. Goldammer, DLR Symposium Neue Perspektiven der Erdbeobachtung 2018, Köln, Germany

Estimation of the gas flaring emissions using Sentinel-3A's SLSTR Alexandre Caseiro, Johannes W. Kaiser, Gernot Rücker, Joachim Tiemann, David Leimbach, Eckehard Lorenz, EUMETSAT Meteorological Satellite Conference 2017, Rome, Italy.

Gas flare characterisation with Sentinel-3 Alexandre Caseiro, Johannes W. Kaiser, Angelika Heil, Gernot Rücker, Joachim Tiemann, and David Leimbach, EGU General Assembly 2017, Vienna, Austria

Identification of gas flares and quantification of their emissions using Sentinel3 SLSTR. Alexandre Caseiro, Johannes W. Kaiser, Angelika Heil, Gernot Rücker, ESA – Living Planet Symposium 2016 Prague, Czech Republic

Deriving a relationship between the radiative power and the SWIR radiance for Gas Flares. Alexandre Caseiro, Johannes W. Kaiser, Angelika Heil, Gernot Rücker, Joachim Tiemann, and David Leimbach, EGU General Assembly 2016, Vienna, Austria

Identification of Gas Flares by means of BIRD images. Alexandre Caseiro, Johannes W. Kaiser, Angelika Heil, Gernot Rücker, Joachim Tiemann, and David Leimbach, 17th Global Emissions Initiative (GEIA) conference 2015, Beijing, China.

Simulação da dispersão de Ozono e Dióxido de Azoto na zona de Lisboa para um cenários meteorológico extremo e normal. Alexandre Caseiro, Carlos Pedro Ferreira, Maria José Portas, Sara Capela, CLIMA2012 – III Congresso Nacional sobre Alterações Climáticas. 2012 Caparica, Portugal

Size-segregated chemical characterization of PM at two sites in the city of Madrid A. Caseiro, F. Mirante, C. Alves, C. Pio, B. Artíñano, European Aerosol Conference 2011, Manchester, United Kingdom.

Bulk determination of organic-bound sulphur in atmospheric aerosol: methorology A. Caseiro, C. Pio, A. Kasper-Giebl, International Conference on Carbonaceous Particles and Aerosols 2011, Vienna, Austria.

Differences in composition of above and below legal limit PM10 at two contrasting sites in the city of Oporto, Portugal Alexandre Caseiro, César Oliveira, Casimiro Pio, Teresa Nunes, Patrícia Santos, Hongjun Mao, Ranjeet Sokhi, and Lakhu Luhanna, EGU General Assembly 2010, Vienna, Austria.

Primary sugars in the aerosol from background sites at a West-East transect in Europe. A. Caseiro, C. Pio and H. Puxbaum, European Geosciences Union General Assembly 2008, Vienna, Austria.

Source identification of the aerosol from a suburban area of Lisbon, Portugal. A. Caseiro, C. Pio, M.C. Freitas, H. Manh Dung and C. Repolho,

European Geosciences Union General Assembly 2008, Vienna, Austria.

Quantifying source contributions to ambient particulate matter in Austria with chemical mass balance receptor modelling. Alexandre Caseiro, Heidi Bauer, Iain Marr, Casimiro Pio, Hans Puxbaum, Vasil Simeonov, 29th International Technical Meeting on Air Pollution Modelling and its Applications, 2007, Aveiro, Portugal. ISBN: 978-1-4020-8453-9

Delignification of Atmospheric Aerosol Samples. R. Andrade, A. Caseiro, C. Pio, A. Kasper-Giebl, H. Bauer, H. Puxbaum, Junior Scientist Conference 2006, TU Vienna, Austria

Contribution of wood burning to PM₁₀ in Austria. A. Caseiro, C. Pio, A. Kasper-Giebl, H. Bauer, H. Puxbaum, Junior Scientist Conference 2006, TU Vienna, Austria

Contribution of Anhydrosugars and cellulose in PM₁₀ in Vienna. A. Caseiro, C. Pio, A. Kasper-Giebl, H. Bauer and H. Puxbaum, European Aerosol Conference 2005, Ghent, Belgium. ISBN: 9080915939

Determination of cellulose and levoglucosan in aerosol samples. A. Caseiro, C. Pio, A. Kasper-Giebl, H. Bauer and H. Puxbaum, European Geosciences Union General Assembly 2005, Vienna, Austria.

MSc and PhD Thesis
evaluation (5)

Contributo e caracterização de PM da Ressuspensão Rodoviária (*Contribution and characterization of road dust PM*), Pedro Miguel Agostinho da Silva, MSc thesis, University of Aveiro, Portugal, 2014

Variação diária e sazonal do OC e EC no aerossol urbano do Porto (*OC and EC diurnal and Seasonal variations in the Oporto urban aerosol*), Sara da Costa Ferreira Alves, MSc thesis, University of Aveiro, Portugal, 2014

Development of a satellite based PM₁₀ concentration product for urban areas, Nuno César dos Santos Grosso, PhD thesis, New University of Lisbon, 2013

Contributo de fontes na qualidade do ar em Estarreja (*Sources contribution for the Estarreja air quality*), Bruno Miguel Oliveira Duarte, MSc thesis, University of Aveiro, 2012

Impacto da crise económica nas emissões atmosféricas industriais (*Impact of the economic crisis on the industrial atmospheric emissions*), Elisabete Marques Martins, MSc thesis, University of Aveiro, 2012

Diverse

Hobbies avid reader; mountainbiking and road cycling, mountaineering, skiing
trail and orientation running: participation in various races in Portugal, namely the *Serra da Freita Ultra Trail* (2012 and 2014).

Rugby:

- player between 1999 and 2014: RU Aveiro (Portugal), Tampere RC (Finland), Vienna Celtic RFC (Austria);
- participation in the founding of the Tampere Rugby Club (Finland, 2001/2002);
- participation in the founding of the Rugby Union Aveiro Association and member of its board for the youth teams (2012-2014), youth coach (2011-2013).

Driving license Type B, since 2003

UAS operator license	Following the German legislation (§ 21 ^a Abs. 4 Satz 3 Nr.2 der Luftverkehrs-Ordnung) since 2017.
Personal portfolio and other resources	https://www.linkedin.com/in/alexandre-caseiro-90b1a635/ https://github.com/AlexCaseiro1979 https://anaconda.org/AlexCaseiro1979/ https://www.researchgate.net/profile/Alexandre_Caseiro https://scholar.google.com/citations?user=IJSgFU4AAAAJ&hl=en