Curriculum Vitae - Ronan PAUGAM

Overview

I am currently working at the Universitat Politècnica de Catalunya in Barcelona (UPC) where I am now an associate professor.
I have 17 years of experience in fire science on both active fire monitoring and fire-plume modelling. I have been working as a postdoctoral researcher at the University of Corte in Corsica for a short 4 months contract in 2020 with Dr Jean-Baptiste Filippi, and at CERFACS in Toulouse with Dr Melanie Rochoux for a year between 2018 and 2019. Previously I was a visiting scholar at the University of Washington (UW) for 2 years working with Dr William MELL from the US Forest Service, and a postdoctoral researcher for 8 years in the Department of Geography of Kings College London (KCL) with Prof. Martin Wooster.
My main scientific products so far are:

- the development of a parameterization for fire plume injection height (PRMv2) which is was implemented operationally in the GFAS fire emission inventory of Copernicus. (see here for a presentation of PRMv2)
- an orthorectification algorithm (OrthoIRCam) designed for IR observation from both Long Wave and Middle Infra Red (LWIR and MWIR) cameras of experimental fire collected without Inertial-Measurement-Unit. See here for more details and examples of application.

Over the last couple of years, I worked on the development of a simulation strategy (the burner method) for the modelling of radiative transfer in fire plume at stand scale. Beside the radiative transfer challenge, this work also includes the generation of fire scenes that necessitate the computation of fire behavior descriptor like the Rate of Spread (ROS) from IR observation, and the development of flux parameterization to couple fire observation with atmospheric model. The end objective of this work supported by my MSCA Fellowship is to help improving Earth Observation fire remote sensing product by creating a virtual fire laboratory where images can be simulated from simulated fire scene.

Personal Data

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Professional Background

Sept 2024 to Present	**Associate Professor, Universitat Politècnica de Catalunya (UPC, Barcelona, Spain) at CERTEC.** - Teaching in Masters of the Chemical Engineering Dept. (see below) - Collaboration with the team of the Canadian WildFireSat satellite mission. Development in the Tiers-2 mission on ROS computation.

	- Participation to the EUBURN initiative led by Cyrielle Denjean from Meteo France. Setup of several project (among which an Intereg-SUDOE) to support airborne campaign aiming at monitoring fire activity and fire plume in Europe.
	- Participation to the first EUBURN campaign: SILEX that is planned in Summer 2025. Development on
	  o tools to process FRP from MWIR image collected from the SAFIRE ATR42 aircraft.
	  o Remote sensing and modelling approaches to monitor fire activity in the SILEX domain (Southern France) in near real time. Leverage of the MeteoSat Third Generation satellite (EUMETSAT) data to compute ROS.
	- Bsc student supervision:
	  o Burner method approach setup for the FDS model, Alex Nieto, UPC, 2025

Oct 2022 to Sept 2024	**Post Doctoral Researcher, Universitat Politècnica de Catalunya (UPC, Barcelona, Spain) at CERTEC.** Supervisor Dr. Eulàlia Planas.
	- Participation in the project I-DEM: Development of a new methodology based on AI and CFD for a dynamic emergency planning and management.
	- Participation to the ClosingGap project with the development of OrthoIrCam to handle UAV-borne grass fire LWIR image collected by the University of Montana.
	- Finalization of previous MSCA fellowship development.
	- Development of a methodology for the creation of a Wildland Industrial Interface (WII) world map within the framework of a risk analysis project on wild fire in industrial regulation.
	- Master student co-supervision:
	  o Smoke plume segmentation on fire plume image, Alba Baldrich Salvado, UPC, 2023
	  o Exploratory anaylys of the wildland industrial interface problem, Miriam Asenet Coca Mendoza, UPC, 2023

Oct 2020 to Oct 2022	**MSCA Fellowship at Universitat Politècnica de Catalunya (UPC, Barcelona, Spain) at CERTEC.** Collaboration with Dr. Elsa Pastor and Dr. Eulàlia Planas (CERTEC), Prof. Jean-Philippe Gastellu-Etchegorry (Cesbio, Toulouse), Dr. Melanie Rochoux and Corentin Lapere (CERFACS, Toulouse) - Radiative Transfer simulation with the DART model using small scale Fire scene simulated with the FDS model. - Development of a data acquisition system for recording thermal IR image from UAV - Application of OrtoIrCam algorithm to experimental fire of the CERTEC data base - extension of DART fire simulation to landscape scale fire scene simulated with the MesoNH model.

Mars – July 2020	**Post Doctoral Researcher, Université de Corte, SPE Lab (Corsica, France).** Supervisor Dr. Jean-Baptiste Filippi. - Support to the FireCaster ANR project - Implementation of the Fire Weather Index calculation for Corsica - Participation at a Fire Fighter training exercise. Simulation of the dummy fire with MesoNH.
June 2018 – May 2019 & Sep 2019	**Post Doctoral Researcher, CERFACS (Toulouse, France).** Supervisor Dr. Melanie Rochoux. - Work in the continuity of the collaboration with Dr. William Mell when at Seattle (See below). - Large Eddy simulation of Fire Plume with the coupled fire-atmosphere model MesoNH-ForeFire. - Airborne Image processing for Fire behaviour metrics, in particular Rate of Spread and flaming residence time calculation. - Deep Learning application to segmentation of fire front in Infra Red fire observation. - Master student co-supervision. o Plume simulations and deep learning to help understand and predict wildfires, Jean-Baptiste Vincentelli, Cerfacs, 2019
Mars 2016 – Feb 2018	**Visiting Scholar, US Forest Service / University of Washington, Seattle USA.** Collaboration with Dr. William Mell. - Large Eddy simulation of Fire Plume with the coupled fire-atmosphere model MesoNH-ForeFire. - Airborne Image processing for Fire behaviour metrics, in particular Rate of Spread and flaming residence time calculation. - Airborne Image georeferencing in collaboration with the Canadian Forest Service. - Development of a methodology for Fire Intensity estimation from small scale fire monitored with low cost UAV.
Oct 2008 - Dec 2015	**Post Doctoral Research Associate, Dept Geography Kings College London (KCL, London,UK)**. Supervisor: Prof. Martin Wooster. - Development of a parameterization for wildfire emission injection height estimation in large scale transport model for ECMWF. - Implementation of mapping methodology to airborne thermal data for derivation of the Fire Radiative Power product. - Development of a fire scene simulation algorithm and coupling with the Radiative transfer model DART (Cesbio, France) for the simulation of the Fire Radiative Power product.

- Multiple Fieldwork participations with organisation position in several of them.
- Successful Grant application as Co-PI for 3 NERC, 1 ESA and 2 internal KCL projects.
- Published in refereed journal and presented in international conferences.

Jan 2005 - May 2008 **PhD Student, Ecole Centrale Paris (Chatenay-Malabry, France) and team Aviation Environment of CERFACS (Toulouse, France)**. Advisor: Dr. Daniel Cariolle.
Thesis title: Numerical study of a contrail evolution and its interaction with the atmospheric turbulence.

- Large-Eddy simulation of aircraft wake instabilities and atmospheric-contrail interaction.
- Published in refereed journal and presented in international conferences.

Studies

Jan 2005 - May 2008	**PhD in Computational Fluid Mechanics** Ecole Centrale Paris and CERFACS.
Sep 2002 - Dec 2004	**Engineering School** Ecole Centrale Paris option Applied Mathematics
Sep 2003 - Sep 2004	**MSc in numerical methods** Ecole Normale Superieure de Cachan
Sep 1998 - June 2002	**BSc, and a Magistere degree in Fundamental Physics** Paris-South University, Centre of Orsay.

Early Research Experiences (internships)

Jun-Oct 2004	Research project in oceanography physics, Department of Meteorology, University of Reading (U.K.) Supervisor: Prof David Marshall subject: Study of the Upper Limb of a Closed Ocean Basin in the hypothesis of Basin Modes and Geostrophic Turbulence.
Apr-Jul 2002	Research project in atmospheric dynamic, Department of Applied Mathematics and Theoretical Physics - University of Cambridge (U.K.) Supervisor: Prof Micheal McIntyre. Subject: Interaction wave – vortex
Jun-Jul 2001	Research project in Fundamental Physics, Laboratoire de l'Accelerateur Lineaire, Paris-South University, Centre of Orsay (France). Supervisor: Pr. Francois Couchot Subject: Short-Range Gravitation Forces

Research Projects

Participation as PI:	
MSCA Fellowship, 2020-22	"3DFireLab", H2020-MSCA-IF-2019-892463, 160k €
Participation as Co-PI:	
NERC small grant, 2012-14	"Determining convective/radiative energy portioning in large scale open fire", NE/J014060/1, £58k
NERC knowledge exchange, 2011-13	"Improving representation of the effects of Biomass Burning Smoke Emissions in a Key UK/European Operational Atmospheric Monitoring and forecasting scheme", NE/I022116/1, £99.5k
ESA, 2012-15	"3D Fire Radiative Power Approach Modelling Approach", ESA ITT 1-6811/11/NL/AF, 249keuro
Canadian Forest Service, 2017	"geo-correct thermal Infrared imagery collected from a fixed wing aircraft", 65k Canadian dollars. Collaboration set-up as a Contract Agreement.
US Forest Service, 2022	"Open Fire Plume Simulation Comparison Exercise", 54k US dollars. Collaboration set-up as a Contract Agreement.

Participation in Consortium project:	
WildFireSat	This is the first canadian government-owned satellite mission designed to monitor all active wildland fires across Canada daily. UPC is officially involved since 2025 in the Tiers-2 on ROS computation.
ClosingGap	Closing Gaps in measurements and understanding: plume characteristics, live fuel moisture dynamics, and process-based modelling. SERDP RC201025. Sep 2020 – Sep 2025.
I-DEM	Development of a new methodology based on AI and CFD for a dynamic emergency planning and management. PID2020-114766RB-100. Sep 2021 – Aug 2024
FASMEE	Fire and Smoke Model Evaluation Experiment. Joint Fire Science Program grant. Jan 2016-Apr 2017
SAMBBA	South American Biomass Burning Analysis. NERC consortium grant. Sep 12 – Aug 16
MACC-III	Monitoring Atmospheric Composition and Climate- Interim Implementation. EU H2020, Aug 2014 - Jun 2015
MACC-II	Monitoring Atmospheric Composition and Climate - Interim Implementation. D-Fire sub-project. EU FP7, 2011-2014
QUANTIFY	Quantifying the Climate Impact of Global and European Transport System, EU FP6, 2005-2009

Research Transfer

2022-23: 2 consultant contracts with Warucene, a services company in wild fire risk funded by Sebastien Lahaye. I helped Warucene to develop a simulation tool to predict fire hazard at the scale of the landscape.

2010-15: Beside the MACC project, my work on the development of the Injection Height parameterization PRMv2 was also funded by a Knowledge-Transfer grant from NERC that I co-organized with Prof Martin Wooster. This supports our collaboration with ECMWF to implement the new parameterization in GFAS.

Teaching

2023-2024: 'WildFire Behavior and Modelling' course and practical for the MSc International Master of Science in Fire Safety Engineering (IMFSE) delivered by UPC. 16h (2023)+16h (2024).

2023-2024: 'Computational Fluid Mechanics' course and practical for Msc in Chemical Engineering and Smart Chemical Factory. 3h (2023) + 10h (2024)

2017: 'FRP product' presentation at the MSc Fire Management delivered by University of Washington (2h).

2014-2015: 'Fire Carbon Cycle' course and practical for the MSc Remote Sensing and Environmental Mapping delivered jointly by University College London (UCL) and KCL (6h).

Invited Presentations

Apr 2023: Colloquium at Florida State University (Tallahassee, USA) organized jointly by the dept. of Computing Science and the Geophysical Fluid Dynamics Institute. Presentation title: "Airborne Observation from Experimental Fire: fire behavior metrics, plume simulation and synthetic IR image modelling". Host: Prof Kevin Speer.

Apr 2023: Seminar at the Dept. of Fire Protection Engineering, University of Maryland (College Park, USA). Presentation title: "Airborne Observation from Experimental Fire: fire behavior metrics, plume simulation and synthetic IR image modelling". Host: Prof Arnaud Trouve.

Apr 2023: Seminar at the Fire Protection Engineering Dept., Worcester Polytechnic Institute (WPI, Worcester, USA). Presentation title: "Airborne Observation from Experimental Fire: fire behavior metrics, plume simulation and synthetic IR image modelling". Host: Prof Albert Simeoni.

Oct 2021: Numerical WildFire 2021 workshop. Cargese, France.

Sep 2015: Meteorology and Climate - Modeling for Air Quality (MAC-MAQ) workshop. Sacramento, USA.

Stay

Oct 2011: 2 months visit invited by Prof. Saulo Freitas at the National Institute for Space Research (INPE), Sao Jose dos Campos, Brazil.

Awards

Oct 2023: Best poster award at the 14th International Symposium on Fire Safety Science (IAFSS), Japan for a poster intitled: Simulation of Thermal Infrared Image from Simulated Fire Scene from R. Paugam, Borrell M., Àgueda A., Regaieg O., Chavanon E., Lauret N., Gastellu-Etchegorry J.-P. and Planas E.

Research Interest and Expertise

- Physical processes of Wildfire, in particular radiation.
- Fire Radiation Measurement – Remote Sensing techniques for prescribed burn.
- Meso Scale Atmospheric Dynamics
- Coupling of physical processes and turbulent atmospheric dynamics, for example Fire Spread modelling.
- Large data set processing for GIS application.

Languages

- French: mother tongue
- English: fluent speaking, reading and writing

Computer skills

- Scientific programming: Python (opencv,xarray,geopandas,…), Fortran90
- System: Linux (server installation and maintenance)
- Software: Latex, Office package, visualisation tools (tecplot, paraview, QGIS)

List of Publications

Peer-reviewed publications:

2023

1. Planas E., **Paugam R**., Àgueda A., Vacca P., Pastor E., Fires at the wildland-industrial interface. Is there an emerging problem?, Fire Safety Journal, Volume 141, 2023

2021

2. **Paugam, R.**; Wooster, M.J.; Mell, W.E.; Rochoux, M.C.; Filippi, J.-B.; Rücker, G.; Frauenberger, O.; Lorenz, E.; Schroeder, W.; Main, B.; Govender, N. Orthorectification of Helicopter-Borne High Resolution Experimental Burn Observation from Infra Red Handheld Imagers. Remote Sens. 2021, 13, 4913.

2019

3. Evangeliou, N., Kylling, A., Eckhardt, S., Myroniuk, V., Stebel, K., **Paugam**, **R**., Zibtsev, S., and Stohl, A.: Open fires in Greenland in summer 2017: transport, deposition and radiative effects of BC, OC and BrC emissions, Atmos. Chem. Phys., 19, 1393-1411, 2019.
4. Andela, N., Morton, D. C., Giglio, L., **Paugam**, **R.**, Chen, Y., Hantson, S., van der Werf, G. R., and Randerson, J. T.: The Global Fire Atlas of individual fire size, duration, speed, and direction, Earth System Science Data 11 (2), 529-552, 2019
5. Liu Y., Kochanski A., Baker K. R., Mell W., Linn R., **Paugam R.**, Mandel J., Fournier A., Jenkins M. A., Goodrick S., Achtemeier G., Zhao F., Ottmar R., French N. H. F., Larkin N., Brown T., Hudak A., Dickinson M., Potter B., Clements C., Urbanski S., Prichard S., Watts A., McNamara D. Fire behaviour and smoke modelling: model improvement and measurement needs for next-generation smoke research and forecasting systems. International Journal of Wildland Fire 28, 570-588, 2019.

2018

6. Johnston J.M., Wheatley M.J., Wooster M.J., **Paugam R.**, Davies G.M., DeBoer K.A.: Flame-Front Rate of Spread Estimates for Moderate Scale Experimental Fires Are Strongly Influenced by Measurement Approach. Fire, 1, 16., 2018

2017

7. Sauvage, B., Fontaine, A., Eckhardt, S., Auby, A., Boulanger, D., Petetin, H., **Paugam**, **R.**, Athier, G., Cousin, J.-M., Darras, S., Nédélec, P., Stohl, A., Turquety, S., Cammas, J.-P., and Thouret, V.: Source attribution using FLEXPART and carbon monoxide emission inventories: SOFT-IO version 1.0, Atmos. Chem. Phys., 17, 15271-15292, 2017.
8. Johnston J. M., Wooster M. J., **Paugam R.**, Wang X., Lynham T. J., Johnston L. M.: Direct estimation of Byram's fire intensity from infrared remote sensing imagery. International Journal of Wildland Fire 26, 668-684, 2017.
9. Remy, S., Veira, A., **Paugam, R.**, Sofiev, M., Kaiser, J. W., Marenco, F., Burton, S. P., Benedetti, A., Engelen, R. J., Ferrare, R., and Hair, J. W.: Two global data sets of daily fire emission injection heights since 2003, Atmos. Chem. Phys., 17, 2921-2942, 2017.

2016

10. Evangeliou, Nikolaos; Zibtsev, S.; Myroniuk, V.; Zhurba, M.; Hamburger, Thomas; Stohl, Andreas; Balkanski, Y.; **Paugam, R.**; Mousseau, T.A.; Møller, A.P.; Kireev, S.I.: Resuspension and atmospheric transport of radionuclides due to wildfires near the Chernobyl Nuclear Power Plant in 2015: An impact assessment. Scientific Reports, Nature, 2016.
11. **Paugam, R.**, Wooster, M., Freitas, S., and Val Martin, M.: A review of approaches to estimate wildfire plume injection height within large-scale atmospheric chemical transport models, Atmos. Chem. Phys., 16, 907-925, 2016.

2015

12. **Paugam, R.**, Wooster, M., Atherton, J., Freitas, S. R., Schultz, M. G., and Kaiser, J. W.: Development and optimization of a wildfire plume rise model based on remote sensing data inputs -Part 2, Atmos. Chem. Phys. Discuss., 15, 9815-9895, 2015. [kept in review for acp]
13. Gonzi, S., Palmer, P. I., **Paugam, R.**, Wooster, M., and Deeter, M. N.: Quantifying pyroconvective injection heights using observations of fire energy: sensitivity of spaceborne observations of carbon monoxide, Atmos. Chem. Phys., 15, 4339-4355, 2015.
14. N. Evangeliou, Y. Balkanski, A. Cozic, W. M. Hao, F. Mouillot, K. Thonicke, **R. Paugam**, S. Zibtsev, T. A. Mousseau, R. Wang, B. Poulter, A. Petkov, C. Yue, P. Cadule, B. Koffi, J. W. Kaiser, and A. P. MÃ¸ller. Fire evolution in the radioactive forests of Ukraine and Belarus: future risks for the population and the environment. Ecological Monographs 85:49-72. 2015
15. **Paugam R**., Wooster, M. J. and Roberts, G, 2013: Use of Handheld Thermal Imager Data for Airborne Mapping of Fire Radiative Power and Energy and Flame Front Rate of Spread, Geoscience and Remote Sensing, IEEE Transactions, vol.51, no.6, pp.3385,3399

2014 and before

16. Rochoux, M. C., Cuenot, B., Ricci, S., Trouve, A., Delmotte, B., Massart, S., Paoli, R. & **Paugam, R.**: Data assimilation applied to combustion, COMPTES RENDUS MECANIQUE. 341, 1-2, p. 266-276 11 p., Jan 2013
17. Val Martin, M., R. A. Kahn, J. A. Logan, **R. Paugam**, M. Wooster, and C. Ichoku, 2012: Space-based observational constraints for 1-D fire smoke plume-rise models, J. Geophys. Res., 117
18. **Paugam R.**, R. Paoli, and D. Cariolle, 2010: Influence of vortex dynamics and atmospheric turbulence on the early evolution of a contrail, Atmospheric Chemistry and Physics, Vol. 10, pp. 3933-3952.
19. D. Cariolle, D. Caro, R. Paoli, D. Hauglustaine, B. Cuenot, A. Cozic, and **R. Paugam**, 2009: Introduction of non-linear plume chemistry into large scale atmospheric models: application to aircraft emissions, Journal of Geophysical Research, Vol. 114, D19302.

Book chapters:

- Rochoux, M. C., Costes, A., **Paugam, R.**, and Trouve, A. (2022). Assimilation de donnees pour les incendies de vegetation. In Encyclopedie SCIENCES (Departement Ingenierie et systemes, Domaine Image, Theme Imagerie et teledetection), editor, Inversion & Assimilation de donnees. Yajing, Yan, ISTE Editions and Wiley edition. 3, 49, 54, 55, 63, 142, 197
- Schiks T., Cantin A.S., Johnston J.M., **Paugam R.**, Whitman E. (2019) Satellite-Based Fire Detection. In: Manzello S. (eds) Encyclopedia of Wildfires and Wildland-Urban Interface (WUI) Fires. Springer, Cham
- Whitman E., Johnston J.M., Schiks T., **Paugam R.**, Cantin A.S. (2019) Imaging Postfire Environments. In: Manzello S. (eds) Encyclopedia of Wildfires and Wildland-Urban Interface (WUI) Fires. Springer, Cham
- Johnston J.M., **Paugam R.**, Whitman E., Schiks T., Cantin A.S. (2019) Remote Sensing of Fire Behavior. In: Manzello S. (eds) Encyclopedia of Wildfires and Wildland-Urban Interface (WUI) Fires. Springer, Cham

In preparation:

- **Paugam R**, Nicolas Cazard, Mélanie C. Rochoux, Corentin J Lapeyre, William E. Mell, Niels Andela, Martin J. Wooster, “Processing high resolution airborne thermal infra red observation

of experimental fire: (part 1) fire front segmentation using deep learning'', in preparation for submission to International Jounal of Wildland Fire.

- **Paugam R**, Nicolas Cazard, Mélanie C. Rochoux, Corentin J Lapeyre, William E. Mell, Niels Andela, Martin J. Wooster, "Processing high resolution airborne thermal infra red observation of experimental fire: (part 2) fire front rate of spread computation'', in preparation for submission to International Jounal of Wildland Fire.

Referenced conference publications:

- **Paugam R.**, W. Mell, J.-B. Filippi, M. Rochoux, M. Wooster, High Resolution Fire Behavior Monitoring and Plume Simulation in the context of Experimental Fire. In Proc. of the IX International Congress on Forest Fire Research (ICFFR) 2022 edited by Viegas, D. X., Coimbra, Portugal.
- Liu, Yongqiang; Kochanski, A; Baker, K; Mell, W; Linn, R; **Paugam, R**; Mandel, J; Fournier, A; Jenkins, M A; Goodrick, S; Achtemeier, G; Hudak, A; Dickson, M; Potter, B; Clements, C; Urbanski, S; Ottmar, R; Larkin, N; Brown, T; French, N; Prichard, S; Watts, A; McNamara, D. 2017. Fire and Smoke Model Evaluation Experiment (FASMEE): Modeling gaps and data needs. In: Proceedings for the 2nd International Smoke Symposium November; 14-17, 2016, Long Beach, California, USA. Missoula, MT: International Association of Wildland Fire. 13 p.
- Dold John, Tsitsopoulos V, Khan I, Scott K, McMorrow J, Lowe E, Danson F M, Ramirez A, Doerr S, Bryant R, Harris M, Tollitt T,Allen K, **Paugam R**, Freeborn P, Smith T, Davies H, Wooster M, Legg C, Gibson S, Elliott A, Yearsley S, 2010. Report on field experiments in Northumberland, March 2010 a multidisciplinary approach to assess fire behaviour and effects in a temperate climate. Proc. 6th Int. Conf. Forest Fire, Res.
- **R. Paugam**, M. Wooster, G. Papadakis, and M. Schultz: Estimation of the Injection Height of Biomass Burning Emission, Proceeding for the ESA-iLEAPS-EGU joint conference, Frascati, Italy, November 2010
- **R. Paugam**, R. Paoli, D. Cariolle and B. Cuenot: Numerical simulation of aircraft plume evolution using a mesoscale code, Proceedings of the International Conference on Transport, Atmosphere and Climate, Oxford, UK, June 2006.

Main Conference Abstracts

- **Paugam R.**, M. Rochoux, N. Cazard, C. Lapeyre, J.-B. Vincentelli, J.-B. Filippi, W. Mell, J. Johnston, M. Wooster. High Resolution Fire Behavior Monitoring & Plume Simulation in the context of Prescribed Burns. Numerical WildFire, IESC Cargese France, 15-19 November 2021.
- **Paugam R.**, N. Lauret, J.-P. Gastellu-Etchegorry, E. Pastor, E. Planas. 3DFireLab: a Virtual Fire Scene Simulator for the Simulation of Infra Red Fire Observation. 13th IAFSS Symposium, Waterloo CA, 26-30 April 2021.
- **R. Paugam**, Gastellu-Etchegorry JP, Mell W, Johnston J., Filippi JB: Prescribed Burn, Helicopterborne Infrared Imagery, and 3D Plume Model for Synthetic FRP Product Simulation. Earth Observation Submit, Montreal 2017.
- **R. Paugam**, Gastellu-Etchegorry JP, Mell W, Johnston J, Filippi JB: Modelling Middle Infrared Thermal Imagery from Observed or Simulated Active Fire, AGU Fall Meeting Abstracts, 2016

- **R. Paugam**, M. Wooster, J. Johnston, J.P. Gastellu-Etchegorry: FRP product simulation tools. Numerical Wildfire workshop, Cargese France 2013
- **R Paugam**, M Wooster, J Atherton, S Beevers, N Kitwiroon, JW Kaiser, S Remy, SR Freitas: Wildfire Emission, injection height: Development, Optimization, and Large Scale Impact - AGU Fall Meeting Abstracts, 2013
- **R Paugam**, M Wooster, J Atherton, JW Kaiser, S Freitas: On the parameterization of Injection Height and the use of the MISR plume height project data - Vol. 15, EGU2013-13779, 2013
- **R Paugam**, M Wooster, S Freitas, S Gonzi, P Palmer: Parameterization of Fire Injection Height in Large Scale Transport Model - Vol. 14, EGU2012-8366, 2012
- **R Paugam**, M Wooster, G Papadakis, M Schultz: Estimation of the Injection Height of Biomass Burning Emission - Vol. 13, EGU2011-1097, 2011