

Curriculum vitae

Professor Guilaine Lagache
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POSITION AND EDUCATION

2014 Senior Astronomer, "Exceptional class", Corps National des Astronomes et Physiciens
Laboratoire d'Astrophysique de Marseille (LAM), Aix-Marseille University, France
2009 - 2013 Senior Astronomer, Institut d'Astrophysique Spatiale (IAS), France
2000 - 2009 Tenure Assistant Astronomer, IAS, France
2008 HDR¹ (D. Sc.) in Astrophysics, Paris-XI University
1998 - 2000 CNES post-doctoral fellowship, IAS
1995 - 1998 PhD Astrophysics, IAS, Paris-XI University

FELLOWSHIPS AND AWARDS

2018 - 2023 ERC Adv. Grant "CONCERTO"
2018 - 2021 A*MIDEX grant for the CONCERTO project
2012 Madame Victor Noury Prize, Grand Prix de l'Académie des Sciences
2008 "Young researcher" Prize of the French Astronomical Society
2005 - 2006 "Distinguished Visiting Associate In Physics", IPAC/Caltech, Pasadena
2006 - 2009 PI of D-SIGALE (<http://www.ias.u-psud.fr/dsigale/>) funded by the "Agence Nationale de la Recherche" (ANR)
2015-2018 Co-PI of "NIKA2Sky" funded by the ANR
Since 2003 Regular funding for scientific projects, travel and hardware from INSU programs (PNG, PNC, PNCG), CSAA, Labex and CNES
1998 - 2000 CNES post-doctoral fellowship

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

In the last decade, I have supervised 7 PhD students and 7 postdoctoral fellows (and 8 Master students). The list of the individual, and current position, is: Alexandre Beelen (tenured assistant astronomer, IAS/LAM), Matthieu Béthermin (tenured assistant astronomer, LAM), Benjamin Bertincourt (data scientist, The analytical Space, New York), Longji Bing (PhD, LAM), Karina Caputi (associate professor, Kapteyn Astronomical Institute, Groningen), Morgane Cousin (Data Scientist, La Ciotat), Nestor Fernandez-Conde (managing director, InOpinia, Paris), Abhishek Maniyar (post-doctoral fellow, New York), Delphine Marcillac (business manager, Ecole Polytechnique, France), Aurélie Penin (data scientist, Datastorm, Saclay), Paolo Serra (data scientist, SparkBeyond, New York), Maud Sorel (Physics teacher, France), Dylan Tweed (data scientist, Altran, Toulouse), Niraj Welikala (research fellow, ROE, Edinburgh).

TEACHING ACTIVITY AND OUTREACH

Teaching duties represent 20% of my time. I have taught at the Paris-XI University during 13 years, and I am now teaching at the Aix-Marseille University, for undergraduate and graduate students. I am also active in outreach activities. For instance, I conducted a project on "Women in Science" in May 2017 with a hundred of students aged 13-14 years (9th Grade) following a preparatory work based on the movie "Hidden figures".

ORGANISATION OF SCIENTIFIC MEETINGS

July 2019 Organisation of The 13th Edition of the Marseille Cosmology Conference Series
Lines in the Large Scale Structure (L2S2) : the promise of intensity mapping
(<https://l2s2.sciencesconf.org/>)
May 2018 SKA: "Extraordinary Energy and Big-Data challenges" LAM, Marseille
(<https://people.lam.fr/lagache.guilaine/SKA.html>)

¹ The HDR (Habilitation à Diriger des Recherches) is the highest University diploma. It consists of a second thesis and is mandatory for obtaining a Professor position and for being responsible of PhD students.

- Oct 2012 "Deciphering the Cosmic infrared Background", Banyuls (France)
Chair of the SOC and LOC (Local Organizing Committee)
Summer School (CNRS thematic school)
- 2009 & 2012 Organization of two workshops for the French participation to the CCAT sub-millimeter telescope (50 persons each)
- 2008 "Techniques for analysis and interpretation of deep cosmological surveys with Herschel", Orsay (France) - Winter School
Chair of the SOC and LOC

SELECTED COMMITTEE SERVICE AND COMMISSIONS OF TRUST

- 2018 Member of the Scientific Advisory Council of IRAM
- 2017 Member of the faculty recruiting committee at the ENS, France (recruitment of Nick Kaiser)
- 2017 Member of the High Council for Evaluation of Research and Higher Education committee for the Lagrange laboratory
- 2016 Member of the engineer recruiting committee at the Institut Néel (recruitment of M. Calvo)
- 2015-2016 Member of the Ad hoc committee called by the French governing bodies to define a joint roadmap on the future of Cosmic Microwave Background research
- 2016-2018 Chair-person of the LAM Scientific Council
- ≥2015 Member of the national CNRS-INSU commission of Astronomy & Astrophysics, a board in charge of selecting the best national projects for funding (scientific secretary)
- 2014 Member of the board of the CNRS-INSU science pluri-annual strategic planning
- 2008 - 2012 Member of the CoNRS Section 17 (national evaluation and recruitment committee)
- 2006 - 2010 Member of the Astronomy Working Group of the French Space Agency (CNES)
- 2007- 2010 Member of the "Spitzer Science User Panel" (European representative)
- 2008-2009 Member of the board of the CNRS-INSU science pluri-annual strategic planning
Chair of the working group "Ground and Space experiment synergies"
- 2002-2006 Member of the board of the French Astronomical Society
- Since 2007 Reviewer for research proposals for:
the French national research agency (ANR Blanc and Chaires d'excellence), the Lagrange Institute (IDEX), the NSERC, the DIM-ACAV, INSU and the ERC
- Since 2007 Member of 11 PhD and HDR juries
- Since 2005 Member of Time Allocation Committees:
Spitzer, CFHT (TAC and LPTAC), IRAM, Opticon, ALMA

PUBLICATIONS

- **As of October 2019: 315 publications** published in refereed journal and more than 51,418 citations (not including papers in press). h-index= 107.
- 23 invited presentations in international conferences, and 35 invited seminars since 1997
- >30 oral presentations in international workshops or conferences.

SELECTED PUBLICATIONS IN THE LAST FIVE YEARS

"Constraining cosmology with the cosmic microwave and infrared backgrounds correlation"

A. Maniyar, G. Lagache, M. Béthermin, S. Ilic, 2019, A&A 621, 32, doi 10.1051/0004-6361/201833765

"The [CII] 158 mm Emission Line in high-redshift galaxies"

G. Lagache, M. Cousin, M. Chatzikos, 2018, A&A 609, 130, doi 10.1051/0004-6361/201732019

"Star formation history from the cosmic infrared background anisotropies"

A. Maniyar, M. Béthermin, G. Lagache, 2018, A&A 614, 39, doi 10.1051/0004-6361/201732499

"The NIKA2 large-field-of-view millimetre continuum camera for the 30 m IRAM telescope"

The NIKA2 collaboration, R. Adam et al., 2018, A&A 609, 115, doi 10.1051/0004-6361/201731503

"The impact of clustering and angular resolution on far-infrared and millimeter continuum observations"

M. Béthermin, H.-Y. Wu, G. Lagache, et al. 2017, A&A 607, 89, doi 10.1051/0004-6361/201730866

"Dissecting the high-z Interstellar Medium through intensity mapping cross-correlations"

P. Serra, O. Doré, G. Lagache, 2016, ApJ 833, 153, doi 10.3847/1538-4357/833/2/153

"Towards a new modeling of gas flows in a semi-analytical model of galaxy formation and evolution"
M. Cousin, G. Lagache, M. Bethermin, B. Guiderdoni, 2015, A&A 575, 33, doi 10.1051/0004-6361/201424462

"Planck 2013 results. XXX. Cosmic infrared background measurements and implications for star formation"
Planck collaboration, 2014, A&A 571, 30 [leading author: G. Lagache], doi 10.1051/0004-6361/201322093

"Planck 2013 results. VIII. HFI photometric calibration and mapmaking"

Planck collaboration, 2014, A&A 571, 8 [leading authors: O. Perdereau & G. Lagache], doi 10.1051/0004-6361/201321538

MAJOR COLLABORATIONS AND TEAM MANAGEMENT

- PI of the CONCERTO (The CarbON CII line in post-rEionization and ReionizaTiOn epoch) project (<https://mission.lam.fr/concerto/>).
- NIKA2/IRAM camera: core team member. Coordinator of the Guaranteed Time Project on Deep Cosmological Surveys (300 hours) and management of the team working on deep field surveys. Participation to two observational campaigns per year at the IRAM 30m telescope and to the commissioning of the NIKA2 camera.
- French SKA White Book: coordination of the science themes "early Universe, cosmology and large scale structures" and "extra-galactic astronomy" (about 15 contributions).
- Leading role in the Planck collaboration, and in particular in the HFI consortium (see Section c): L1 operation, L2 data reduction pipeline (in particular photometric calibration), L3 validation, & science exploitation (leading the CIB analysis). Core team member, HFI associate and Planck Scientist. Coordinator and team management of the working group dedicated to the CIB (WG6.6).
- Member of the executive committee of the Herschel Open Time Key Project H-ATLAS (2008 - 2011), "The Herschel Astrophysical Terahertz Large Area Survey" (600 hours).
- Associated Member of the Herschel/SPIRE Guaranteed Time Observation, high-z "Science Advisory Group" (900 hours).
- Member of the Spitzer/MIPS GTO deep survey team - PI/co-PI of three Spitzer/IRS Open Time Proposals (for a total of 404 hours).
- Member of the Archeops CMB collaboration (main contribution on photometric calibration and data reduction).
- Leading role in the FIRBACK/ISOPHOT collaboration -- FIRBACK was the 8th largest ISO observational program (PI: Jean-Loup Puget). Responsible of the management of the FIRBACK collaboration