CURRICULUM VITÆ

Antoine PETITEAU

Born 19 July 1982 in Saint-Lô (France)
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ACTUAL POSITION

Associate professor at University Paris Diderot (Paris 7) - Laboratory APC (AstroParticule et Cosmologie) : member of groups Gravitation, LISA and LISAPathfinder

Research topics : *Gravitational waves, data analysis, detector simulation (project LISA/eLISA, Pulsar Timing Array, Pathfinder, ...), astrophysic (super-massive black hole, binaries, ...), cosmology.*

SCIENTIFIC RESPONSABILITIES AND APPOINTMENTS

2022–... : **Chair of the fundamental physics thematic group of CNES et member of CERES (evaluation committee on Research and space exploration) of CNES**

2022–... : Member of the organisation comity of "Rencontres de Moriond Gravitation"

2022–... : Co-chair of the Data Analysis Group of the "Groupement de Recherche" Gravitational Waves

2022–... : Member of the of scientific board of the "Groupement de Recherche" Gravitational Waves

2021–... : Head of the LISA at IRFU/DPhP

2021–... : Member of LISA Formulation Management Team

2020–... : **Member of the scientific board of Paris Observatory**

2019–... : Member of topical group fundamental physics at CNES

2019 : Member of the evaluation committee Voyage2050 (*Topical teams*) of ESA

2019 : Member of GWIC-Braccini Thesis Prize 2017 committee

2018–2019 : Member of two committees of propsective INSU 2019 on "Prospective of ressources / ground-space complementarity" and R&D

2017–... : **Co-Lead of LISA mission, member of Executive Committee of LISA Consortium**

2017–... : **PI LISA France, member of LISA Consortium board**

2017–... : Member of the LISA Science Study Team at ESA

2017–... : Lead of the LISA Data Processing Group and of the Ground Segment for the LISA Consortium

2017–... : Member of the LISA Publication and Presentation Committee

2017–2021 : Member of the LISA Coordination Team and the LISA Application Review Board

2017–2021 : Member of the ATER committee at the Physic department (Univ. Paris)

2017–2021 : Member of the scientific board of SKA-LOFAR Group in France

2015–2017 : Co-chair of simulation working group for the LISA mission
2015–2019 : Member of the laboratory council at APC
2014–... : French PI of the LISAPathfinder mission
2014–... : French scientific lead of the LISA Data Processing Center
2014–... : Member of the scientific working group Square Kilometer Array France
2014–2021 : Member of scientific board of GPhys ("action spécifique" of observatory of Paris on Gravitation and Fundamental Physics) then PhyFOG (Fundamental Physics and Graviational Waves) of Paris Observatory
2011–... : Member of the *International Pulsar Timing Array* collaboration
2011–... : Member of the *European Pulsar Timing Array* collaboration
2011–... : Member of the LISA consortium (previously eLISA)
2011–2012 : Co-coordinator for the science case study of NGO in L1 ESA selection
2008–2011 : Member of the *Mock LISA Data Challenge* task force

AWARDS

2018 : Jean Thibaud Prize of the Academy of sciences, "belles-lettres" and arts of Lyon
2016 : ESA Corporate Team Achievement Award 2016 for the LISA Pathfinder Mission

PROFESSIONAL HISTORY

2011– ... : Associate professor, APC, University Paris-Diderot (Paris 7)

2008–2011 : Post-Doc, Albert Einstein Institute - Max-Planck-Institut fur Gravitationsphysik, Golm, Germany, "*Design and coding of data analysis algorithm for LISA*"

EDUCATION

2005–2008 : PhD Thesis, APC Laboratory, University Paris-Diderot 7
Sujet : *From LISA simulation to data analysis*
Advisor : G. Auger, Allocation : french ministry

2004–2005 : Master in Astronomy & Astrophysics (2nd year), Univ. Pierre et Marie Curie, Paris

2003–2004 : Master in Fundamental Physics (1st year), Univ. Pierre et Marie Curie ;

2000–2003 : Licence in Physics, University of Caen

1996–2000 : Saint-Lô highschool (Baccalauréat Scientifique in June 2000)

TEACHING EXPERIENCE

Assistant professor at University Paris Diderot (Paris 7).
Teaching topics : algorithm and programming for physicists , data processing, renewable energy, space technics
Level : licence 1, licence 2, licence 3, master 1, engineering school

SUPERVISION

On the postgraduate level :
2019–... : Co-supervision of N. Dam Quang : *Simulations et analyses de données pour une configuration réaliste de LISA*

2019–... : Co-supervision of M. Falxa : *Détection des ondes gravitationnelles basse fréquence*

2016–2019 : Supervision of J.B. Bayle, *From LISAPathfinder to LISA : instrumental modelling and analysis.*

2012–2015 : Participation to the supervision of H. Inchauspé (dir. : E. Plagnol - APC)

2011–2013 : Participation to the supervision of A. Lassus (dir. : I. Cognard - LPC2E)

On the undergraduate level :

2016 : J.B. Bayle (M2 NPAC), 4 months, *From LISA Pathfinder to LISA*

2015 : J.B. Jolly (M2 NPAC), 4 months, *Simulation of cosmic strings for eLISA*

2015 : N. Taghi (L2 phys.),1 months, *Observation of galactic binaries for eLISA*

2014 : J.B. Jolly (M1 mag. phys.), 3 months, *Modelisation of cosmic strings for eLISA*

2014 : M. Bulfay (M1 phys.), 3 months, *PTA and gravitational waves*

2014 : V. Laurette (L3 mag. phys.), 1 months, *Calibration of eLISA using verification binaries*

PUBLIC ENGAGEMENT

- Interview for France Inter, Le Monde, Le Parisien, Le Figaro, Les Echos, Sciences et Avenir
- Public lectures at "Palais de la découverte – Paris", Nançay Radio Observatory Public Opening, "Cercle Universitaire Enghins-les-Bains", "Sciences an campagne"', Images Sonores 2020 and 2021, Explor'espace
- Lecture on Graviational Waves at Open University of Université Paris-Diderot
- Seminars on graviational waves, LISA and PTA in many laboratories, schools and conferences

COMPUTER EXPERIENCE

- Programming languages : python, C++, C, FORTRAN 77/90, MPI ;
- Containers : docker, singularity ;
- Softwares : Mathematica, MATLAB, Gnuplot, Octave, ... ;
- Other : git (CI/CD, registry, ...), TEX, markdown, HTML, JavaScript ;
- Main realisations :
  - LISA Data Challenge, LISA Figures of Merit (with M. Le Jeune, S. Babak et al.) ;
  - LISACode (simulator of LISA $\sim$ 30,000 lines) ;
  - LISAToolBox : noise budget, sensitivity, science performances ;
  - Multimodal Genetic Algorithm (data analysis $\sim$ 40,000 lines) ;
  - Participation to Mock LISA Data Challenge task force ;
  - Others tools for eLISA, LISA, LISAPathfinder and Pulsar Timing Array.

LANGUAGES

- French : native ;
- English : read and written ;
- Spanish : basic ;
- German : basic.

HOBBIES

- "Nature" (birdwatching, ...) ;
- Amateur astronomy, computer programming ;
- Sports : rugby, cycling, hiking, swimming.
- All sciences, specially astrophysics, astronomy, and sustainable energies ;