



# Philippe Amram, Dr.

## Professor

### Personal Information

Address 445 Chemin de l'espéro, 13090, Aix-en-Provence, France  
Born 1962, October 24 at Vesoul (Haute-Saône, 70), France  
Nationality French  
Status Single, two children (born in 1994 and 2000)

### Professional Contact

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### Affiliations

Establishment **Aix-Marseille University, AMU**, [www.univ-amu.fr](http://www.univ-amu.fr)  
Observatory **Observatoire des sciences de l'Univers**, *OSU Pythéas*  
Department **UFR Sciences**, *Physics department*  
Research Laboratory **Laboratoire d'Astrophysique de Marseille, LAM**, <http://lam.fr/>  
Research Team **Galaxies, Etoiles & COsmologie, GECO**, <http://lam.fr/GECO/>  
National Committee **34ième Section Comité National des Universités, CNU 34**, Astronomie et Astrophysique

### Academic Work Experience

2024 – **Full Professor, Professeur de classe exceptionnelle**, Aix-Marseille Université  
2010 – 2024 **Full Professor, Professeur de première classe**, Aix-Marseille Université  
2005 – 2010 **Full Professor, Professeur de seconde classe**, Aix-Marseille Université  
2005 – 2005 **Associate Professor, Maître de Conférences hors classe**, Université de Provence  
1996 – 2005 **Associate Professor, Maître de Conférences de première classe**, Univ. Provence

Projects I am involved in several large projects based on specific facilities: MHONGOOSE on MeerKAT (SKA pathfinder), Subaru Prime Focus Spectrograph (PFS), EUCLID, HARMONI (ELT), MOSAIC (ELT), J-PAS (Javalambre Physics of the Accelerating Universe Astrophysical Survey), S-PLUS (The Southern Photometric Local Universe Survey)

### Instrumentation

**Development of spectro-imagers and related technologies, before carrying out the analysis, interpretation and modelling of observations, my approach is also observational and instrumental. I use the observation facilities available to the community but in addition, I participate in the design, development and realisation of three-dimensional optical spectrometers and related technologies for the international community**

FOnTAiNE **Filtre OpTique Accordable de Nouvelle gEneration, New Generation Tunable Optical Filter**, the objective of this project was to invent, develop and use a new technology to position the plates of a tunable filter at nanometrical precision over a range of 200 microns. We were issued the patent No. 1555381 the 12 June 2015. The industrial applications go well beyond our application and are the subject of a transfer of technology.

FaPCAM **Fabry-Perot CAMera, In collaboration with the Universities of Mexico (UNAM) and Montreal (LAE)**, we are developing a new generation camera (Fabry-Perot CAMera) for the OSIRIS and NEFER instruments hosted on the 10.4m GRAN TECAN telescope (Canary Islands)

3D-NTT Developed in partnership with the University of Montreal and the Observatory of Paris, the 3D-NTT instrument is a spectro-imager under development integrating, among other innovations, the two previous technologies.

SAM-FP In collaboration with the University of Sao Paulo and SOAR observatory, we have developed a visitor instrument, SAM-FP, that can accommodate two Fabry-Perot interferometers available for use with the SOAR Adaptive Module (SAM), a laser-assisted adaptive optics instrument at the 4.1-m SOAR telescope.

GHASP The GHASP instrument (Université de Provence) was commissioned at OHP as a visitor instrument in 2000, it is still largely used (~30 nights/year).

### Student Supervisions

Thesis **PhD Student (Co-)Supervisions**

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|--|---|
| <ul style="list-style-type: none"><li>o Juan Manuel Pacheco Arias (2023-2026)</li><li>o Guillaume Bonnet (2019-2022)</li><li>o Munoz-Sardaneta Maria Minerva (2017-2021)</li><li>o Paul Adamczyk (2017-2020)</li><li>o Valentina Abril-Melgarejo (2017-2020)</li><li>o Jesus Gomez-Lopez (2015-2019)</li><li>o Marie Korsaga (2014-2019)</li><li>o Jean-Luc Gach (VAE, 2018)</li><li>o Issa Ouattara (2012-2015)</li></ul> | <ul style="list-style-type: none"><li>o Marie-Maude Denus de Baillargeon (2010-2014)</li><li>o Valentin Perret (2010-2013)</li><li>o Sergio Torres-Flóres (2007-2010)</li><li>o Olivier Daigle (2006-2010)</li><li>o Benoît Epinat (2005-2008)</li><li>o Isaura Luisa Fuentes Carrera (2001-2004)</li><li>o Olivier Hernandez (2001-2004)</li><li>o Sébastien Blais-Ouellette (1997-2000)</li></ul> |
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I also participated to the co-supervision of other PhD students abroad: Juan Carlos Basto Pineda (2012-2016), Zacharie Kam Sié (2012-2015), Carlos Barbosa (2012-2016), Toky Herimandimby Randriamampandry (2010-2013), or at LAM: Pellicia Deborah (2013-2016), Olivia Garrido (2000-2003), Laurent Chemin (2000-2003), Patricia Ambrocio-Cruz (1995-1999), Delphine Russell (1994-1998), Henri Plana (1992-1996), Guillermo V. Goldes (1992-1994).

Others **Masters, Engineers, Degree in Physics**

I supervised or co-supervised yearly from 1 to 3 master students, engineers, degree dissertations, leading to a total number of about 50 students.

1994 – 1996 **Associate Professor, Maître de Conférences de seconde classe**, Univ. Provence  
1993 – 1994 **Associate Professor, Maître de Conférences stagiaire**, Université de Provence  
1992 – 1993 **Fellowship, Post-doctorant**, Montréal University  
1990 – 1992 **Assistant Professor, Attaché Temporaire d'Enseignement et de Recherche**, ATER, Université de Provence  
1989 – 1990 **PhD Student & Associate Lecturer, Allocataire de recherche et Moniteur de l'enseignement Supérieur**, Université de Provence  
1987 – 1989 **PhD Student, Allocataire de recherche**, Université de Provence  
1986 – 1987 **High School Teacher in Physics and Chemistry, Professeur de physique-chimie au Lycée Militaire d'Aix-en-Provence, France**, Lieutenant de réserve

### Education

July 1998 **Université de Provence, Marseille, HDR**, Habilitation à Diriger des Recherches (*Ability to conduct researches*)  
title *Kinematics of Galaxies. Observational Cosmology.*  
June 1991 **Université de Provence, Marseille, PhD thesis**, Thèse d'université  
title *Kinematics of ionized gas in Spiral Galaxies. Environmental Effect in Cluster and Binary Galaxies.*  
1984–1986 **Université de Provence, Marseille, Master Degree**, Diplôme d'Etude Approfondie (DEA) & Maîtrise de Physique.  
title *Radiation, Plasmas and Astrophysics.*  
1982–1985 **Université de Provence, Marseille, Degree in Physics**, DEUG A & Licence de physique.  
1974–1981 **Institut St-Joseph, Bastogne, Belgium, High School**, Etudes secondaires. Humanités Modernes, section scientifique.  
1968–1974 **Ecole Communale, Houffalize, Belgium, Primary School**

### Publications

NASA/ADS My research activity is materialised and quantified through **388 publications**, including **206 in peer-reviewed journals**. This work is rated by 8151 citations, a H-index = 52, a total number of reads of 15.138 and an H-index for results = 78. Source: Astrophysics Data System (<http://adsabs.harvard.edu/>). Last update : January, 2026. For detail, see the list of publications or <https://ui.adsabs.harvard.edu/>.

### Research topics

#### Physical, kinematic and dynamical study of galaxies

Galaxy Evolution My research theme is the formation and evolution of galaxies in order to retrace their history, aiming to decipher the evolution and organization of baryonic and dark matter within galaxies. The challenge is to understand how the galaxies were formed and evolved to reach the degree of evolution that we observe today in the local universe with all its complexity. I take a keen interest in studying galaxy evolution in comparing nearby and distant galaxies.

Galaxy Kinematics My work is related to the study of the kinematics of spiral and late-type galaxies in all their diversity: isolated galaxies; interacting galaxies in compact groups, groups, merging, pairs, clusters; barred galaxies, bulgy galaxies, ring galaxies, star-forming galaxies, blue compact dwarf galaxies, low surface brightness galaxies; outflows and inflows in galaxies, circumgalactic medium.

Baryonic vs dark matter My purpose is to understand the role of baryonic and dark matter distributions within spiral and late-types galaxies considering their secular evolution and the influence of the environments.

Local Group I have an interest in detailed kinematical studies of the Milky Way, the Magellanic Clouds, Messier 31, Messier 33 and some other members.

### Teaching

Since 1990 **192 hours/year, I have always carried out my statutory (and more) annual teaching duty of 192 hours**. I teach physics and astrophysics, essentially at master level (research and engineering/professional) but also at B.Sc. level (Licence); I provide lectures (cours), tutorials (TD) and practical work (TP)

Physics Currently I teach methodology (Licence). I also taught thermodynamics (classical, transport), optics, waves and other fundamental physics courses including numerical calculus;

Mathematics Currently I teach Mathematics for students just arriving at university from high school (Licence)

Astrophysics Currently I teach general relativity and cosmology (Master, Licence); exoplanets (Licence). I also taught physics of galaxies, galaxy evolution, interstellar and intergalactic medium (Master)

Instrumentation Currently I teach astronomical instrumentation (Master)

Summer School I regularly participate to Summer Schools and student formation abroad

Outreach I regularly participate to public outreach

### Professional Service

Since 2005 **Head of PhD & HDR committee, 3/years in average**  
Since 1995 **PhD committee member, 3/years in average**  
Since 2024 **CL, Conseil de laboratoire du LAM**  
Since 2024 **CS, Comité Scientifique de l'OSU Pytheas, AMU**  
2020 – 2023 **CNU, nominated alternate member of the National University Council**, Conseil National des Universités, CNU Section 34, Astronomy and Astrophysics  
2015 – 2018 **Master POESII, LAM correspondent for the Erasmus Mundus Master "Europhonics-POESII"**, in replacement/completion of the IOL Master since 2015, <http://www.europhonics.org/wordpress/>  
2006 – 2015 **Master IOL, Head of the master "Instrumentation-Optics-Laser (IOL)"**, professional "speciality" depending on the Master of Physics and the Master Instrumentation  
2000 – 2012 **Master Astrophysics, LAM correspondent for astrophysics**, successively in the masters labelled "Radiation, Plasmas and Astrophysics" thus "Astrophysics, Energy and Radiation", depending on the Master of Physics  
2016 – 2019 **CNU, elected alternate member of the National University Council**, Conseil National des Universités, CNU Section 34, Astronomy and Astrophysics  
2009 – 2015 **Optics & Photonics, Head of the Optical/Photonic axis of the ARCUS/Brazil program (2009-2011)**, member of second program ARCUS/Brazil program (2012-2015)  
2008 – 2011 **CNAP, nominated member of the National Council of Astronomers and Physicists**, Conseil National des Astronomes et des Physiciens, CNAP, Section "Astronomie et Astrophysique"  
2008 – 2011 **CNU, elected member of the National University Council**, Conseil National des Universités, CNU Section 34, Astronomy and Astrophysics  
2008 – 2011 **LAM deputy-director, 4-year term**  
2004 – 2007 **LAM deputy-director, 4-year term**  
2004 – 2011 **Teacher-Researcher Recruitment Commission, Commission de spécialiste Section 34, Astronomie et Astrophysique**, Université de Provence, successively member, assessor and president of the commission  
2004 – 2011 **Research committee of the physics department, Successively member of the department board and of the research committee**  
2004 – 2011 **Scientific committee of the Doctoral School "Physics and Sciences of matter" (ED 352), member of the committee**  
2000 – 2004 **CNU, member member of the National University Council**, Conseil National des Universités, CNU Section 34, Astronomy and Astrophysics