

Dr. Thierry Fusco ONERA Senior Scientist

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Born the 23rd August 1973
in Marseille (France)
3 children

Current position: **Senior researcher (directeur de recherche) at ONERA** (French Aerospace Lab) and
Invited researcher at Laboratoire d'Astrophysique de Marseille (LAM)

Employments and Positions

- Since 2011 – Invited researcher at LAM
- Since 2001 – ONERA, Optics department - Research Director
- 2000 2001 – LESIA, Research Engineer: integration of NAOS-CONICA
- 1997 2000 – PhD student at ONERA on “Partial correction and anisoplanatism in AO”

Scientific achievements

Scientific responsibility of Adaptive Optics activities at ONERA and LAM

- *Member of the Optics Department Scientific Advisory Committee* 2017 –
- *Negotiation and management of the AO4ELT convention (ONERA-INSU)* 2015 –
Framework agreement for joint development of Adaptive optics for astronomy
- *Responsibility of LAM-ONERA integrated team* 2015 –
For the development of next generation of AO system for the VLT/ELT
- *ONERA (Physic branch) scientific committee* 2012 – 2017
- *High Angular Resolution scientific interest group [GIS PHASE],
Scientific committee* 2006 – 2014
- *LABEX FOCUS, Scientific committee* 2011 – 2016

- *AO scientist of HARMONI - Member of the project office (Oxford University)* 2015 –
first light instrument of the ELT (39m European telescope)
- *ONERA responsible of MOSAIC-AO for ONERA and LAM* 2016 –
first generation instrument of the E-ELT
- *Project management and scientific responsibility of SAXO,* 2006 – 2016
Extreme AO system of the SPHERE project (VLT 2nd generation)
- *Scientific responsible of the AO WP for the OPTICON-H2020 project* 2017 – 2020
- *Scientific responsible of the AO WP for the OPTICON-FP7 project* 2010 – 2016
- *Management and scientific responsibility of the RASCASSE project* 2013 – 2015
Wavefront sensing for active optics on large space based telescopes (CNES)
- *Management and scientific responsibility of DROP (FUI project)* 2010 – 2013
automatic detection of small objects on airport runways
- *Scientific management of the PEMOA platform* 2013 – 2018
Goal : AO developments and expertise for SME in PACA region
- *PI of ONERA Research Project “VASCO”* 2017 – 2019
Visible AO and Sky Coverage Optimisation
- *PI of ONERA Research Project “NAIADE”* 2013 – 2015
New Approches in Imaging with AO and Deconvolution
- *PI of ONERA PRF “CASSIOPEE”* 2008 – 2011
Composants Avancés et Sous-Systèmes Innovants Pour l'ELT Européen ELT
- *Project scientist of ODISSEE:* 2011 – 2013
On-sky demonstration of low orbit satellite imaging from the ground – ETO
- *PI and Project Management of the ATLAS project* 2009 – 2010
Laser Tomographic AO system for the E-ELT (Phase A)
- *AO responsible of the EAGLE project* 2006 – 2010
Multi-Object AO instrument for the E-ELT (Phase A)

Main Collaborations

- France : Laboratoire d'Astrophysique de Marseille,
Observatoire de Paris, Grenoble, Lyon and Nice, IOGS
- Europe : European Southern Observatory (ESO), Oxford University, Durham University,
UK-ATC Edimburgh, INAF-Arcetri, INAF-Padova, ESA, Porto University
- Other : TMT, GMT, Keck and Gemini Observatories, HIA (Canada), Caltech,
ANU-Australia, STScI (space Telescope)

Scientific achievements

- Winner of the "Fabry de Gramont" award (*Optical Society of France*) - 2009
- HDR «Optique adaptative et traitement d'images pour l'astronomie» - 2008
- PhD «Correction partielle et Anisoplanétisme en Optique Adaptative» - 2000 (with honors)
- Chairman and co-chair of AO4ELT conferences (2009, 2011, 2013, 2015, 2017, 2019)
- SPIE scientific committee (2008, 2010, 2012, 2014, 2016 and 2018)
- Organisation (chairman) of "Wavefront sensing in the ELT era" conference (Marseille 2016, Padova 2017)
- Scientific and Technical Expertises for ANR, European community, Pôles de compétitivités, NSF, NCRC, ESO, Keck, Gemini, INAF
- Invited talks at Observatoire de Paris, Observatoire de Grenoble, Observatoire de la Cote d'Azur, Keck observatory, Gemini observatory, ESO, Leiden university, INAF-Arcetri, Oxford, STScI
- Organisation of international workshops (FP7 and H2020 frameworks)
 - 2017 : Laser Guide Star workshop in Marseille (30 persons, European-wide)
 - 2016 : AO data processing workshop in Marseille (35 persons, World-wide)
 - 2015 : Tools for AO simulations on ELT in Marseille (25 persons, European-wide)
 - 2014 : PSF reconstruction in Marseille (30 persons, World-wide)
- Feature editor of JOSAA (vol 21) and Applied Optics (vol. 49) special issue on AO (2010)

Teaching and supervisions

- Supervision of 16 PhD / Co-supervision of 9 PhD
- 13 post-docs / non-permanent staff
- Jurys member (HDR, PhD) : typically 3 per year
- Scientific supervision of a research team (LAM-ONERA Integrated team)
- Project team supervision (SPHERE-SAXO, ATLAS, HARMONI)
- Summer school "ROP" (Réseau Optique Photonique du CNRS) Cargese 2012
- ROP days « Optique Adaptative et ses applications » 2017
- Lectures (AO and its applications) and Practical works with PEMOA platform
- Teaching : Supelec Reims, Centrale Marseille, Erasmus Mondus Master 1&2, Master Astronomy and instrumentation Nice-Sophia Antipolis

Scientific Communication

- CNRS Film « Un œil sur les exoplanètes » (<https://lejournal.cnrs.fr/videos/sphere-un-oeil-sur-les-exoplanetes>)
- National and international press releases, Radio interview (France inter et France info, podcast ONERA)
- Newspapers : Le Monde, Le Figaro, Photoniques
- Participation to the « journées du Ciel et de l'Espace », café des sciences » at Paris and Marseille
- Animation on AO during the « Ville Européenne des Science » and « nuit des étoiles » events
- Presentation in front of the ONERA executive board : "Détection de photons à l'ONERA"
- Collège de France conference « AO for Astronomy »
- Participation to the TV show « C'est pas sorcier » on the VLT

Publications

163 peer reviewed publications (73 since 2010) *

- 14 as first author, 46 in the 3 first authors, 13 as last author

349 Publications in international conference

- 42 as first author, 133 in the 3 first authors, 6 as invited speaker

H-index = 40, i10-index = 1688, Citations = 9076 (Google scholar)