

Ileyk EL MELLAH

born on 5th April, 1989

French citizen

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Education

Since 2013	PhD thesis supervised by Fabien CASSE & Andrea GOLDWURM on <i>Numerical simulations of wind accretion onto compact bodies</i> AstroParticule & Cosmology laboratory (APC) - Univ. of Paris 7 Diderot
2012-13	Master degree in Astrophysics - Observatory of Paris Obtained with distinction
2010-12	Normalien at the <i>Ecole Normale Supérieure</i> of Cachan
2011-12	Research internship and graduate courses - MIT, Cambridge
2010-11	French <i>Agrégation</i> of Physics & Chemistry - ENS of Cachan, FR Rank : 2 nd
2008-10	Bachelor degree in Fundamental Physics - ENS / Paris 6 University Obtained with honours
2006-08	Preparatory classes to <i>Grandes Ecoles</i> - Lycée Janson-de-Sailly, Paris

Research

Since 2013	PhD thesis supervised by Fabien CASSE & Andrea GOLDWURM on <i>Numerical simulations of wind accretion onto compact bodies</i> APC - Univ. of Paris 7 Diderot
2011-12	One-year internship supervised by Saul RAPPAPORT on <i>Monitoring of close-in binary stars and short period exoplanets</i> Data analysis and models of light curves from the Kepler satellite Kavli Institute for Astrophysics - MIT
Ap-Ag 2010	Internship supervised by Jean-François LESTRADE on <i>Gravitational perturbations of debris discs by a passing-by star</i> LESIA - Paris Observatory
Jn-Jl 2009	Internship supervised by Gérard BELMONT & Patrick ROBERT on <i>Resampling of the CLUSTER satellites data</i> Plasma Physics Laboratory - Vélizy

Communications

Peer-reviewed publications

- [1] **I. EL MELLAH** & F. CASSE
Numerical simulations of axisymmetric hydrodynamical Bondi-Hoyle accretion on to a compact object (2015) - MNRAS 454 (3): 2657-2667
- [2] R. SANCHIS-OJEDA, S. RAPPAPORT, J. WINN, M. KOTSON, A. LEVINE, **I. EL MELLAH**
A Study of the Shortest-period Planets Found with Kepler (2014) - ApJ, vol. 787:1 18pp
- [3] S. RAPPAPORT, K. DECK, A. LEVINE, T. BORKOVITS, J. CARTER, **I. EL MELLAH**, R. SANCHIS-OJEDA, B. KALOMENI
Triple-star Candidates among the Kepler Binaries (2013) - ApJ, vol. 768:1 18pp
- [4] S. RAPPAPORT, A. LEVINE, E. CHIANG, **I. EL MELLAH**, J. JENKINS, B. KALOMENI, E. S. KITE, M. KOTSON, L. NELSON, L. ROUSSEAU-NEPTON, K. TRAN
Possible Disintegrating Short-Period Super-Mercury Orbiting KIC 12557548 (2012) ApJ, vol. 752:1 13pp

Oral contributions

- Oc 2015 **Monthly Computational Astrophysics seminar**
CEA Saclay, SAp, AIM laboratory - 50' invited talk
- Jn 2015 **Journées de la SF2A** - Toulouse - 20' talk
The proceedings of the 2015 Journées de la SF2A
- Mr 2015 **Ecole des Houches : Turbulence, magnetic fields and self organization in laboratory and astrophysical plasmas** - 20' talk

Informal talks

- Oc 2015 **Graduate students workshop on the Atom code editor** - APC
- Ap 2015 **APC grad day** - APC
- Mr 2015 **Weekly graduate students seminar - The minority game & The hipster effect** article by J. TOUBOUL - APC
- Dc 2014 **The Elbereth conference** - Paris - 20' talk
- Nv 2014 **FACe Journal Club - Anomalous hysteresis cycles in BH-LMXB**
FACe, Paris 7
- Jn 2014 **FACe JC - The spin of Cygnus X-1's BH candidate** - FACe, Paris 7
- Jn 2014 **APC grad day** - APC
- Mr 2014 **Weekly graduate students seminar - Numerical cognition : counting without fingers** - APC
- Nv 2013 **High energy group seminar - Instabilities in accretion discs** - APC
- My 2012 **MKI Journal Club - In-situ accretion of H-rich atmospheres on short-period super Earths** by M. Ikoma & Y. Hori (12) - MKI, MIT

Teaching & outreach

Teaching

2014-15	Classical Mechanics, 1 st year - Univ. of Paris 7 Diderot
2013	Physics for Medical studies, 1 st year - Univ. of Paris 7 Diderot
2013	Deterministic systems and signals, 4 th year - Univ. of Paris 7 Diderot
2012-13	Private lessons with the company <i>Cours Thalès</i> - Paris
2011	French <i>Agrégation</i> of Physics & Chemistry
2009-10	Teaching assistant at the high school Gustave EIFFEL - Cachan

Outreach

Ap-Nv 2015	Community manager of the Young Physicists Meeting - Paris
Oc 2015	Festival of Science - Univ. of Paris 7 Diderot
Sp 2015	Wolfram demonstration on the ballistic motion in a ROCHE potential and 3D-printing of the corresponding surfaces - APC
2013	Java applet on TURING's theory of morphogenesis - Paris Observatory

Grants & awards

2015	Computing time on the CINES clusters : 300 kh-CPU
2013	3-years PhD fellowship from the Ecole Normale Supérieure of Cachan
2013	3-years teaching assistant grant from the Université of Paris 7 Diderot
2012	1-week observing time at the Mont Mégantic Observatory (Canada)
2011	French <i>Agrégation</i> of Physics and Chemistry - Rank : 2 nd
2010	2-years fellowship from the ENS of Cachan as a <i>normalien</i>

Conferences & schools

- Dc 2015 **28th Texas symposium on Relativistic Astrophysics** - Geneva, SW
Poster
- Jn 2015 **Journées de la Société Française d'Astronomie et d'Astrophysique**
Toulouse, FR - 20' talk
- Mr 2015 **Ecole des Houches : Turbulence, magnetic fields and self organization
in laboratory and astrophysical plasmas** - Les Houches, FR - 20' talk
- Nv 2014 **Magnetic fields from the Sun to black holes,
in memory of Jean Heyvaerts** - Paris, FR - Poster
- Sp 2014 **The many faces of compact stars, the newComp star school**
Barcelona, SP
- Jn 2014 **Journées de la SF2A** - Paris, FR
- My 2013 **International Cargese school on cosmic accelerators** - Cargese, FR

Selected skills

Programming languages

Fortran, C, C++, **Python**, Idl, Java, Perl, XML, **Csh**, Bash, **HTML**, **CSS**, JavaScript,
CoffeeScript, HTML5

Codes & softwares

MPI-AMRVAC, Mathematica, VisIt, Paraview, Vampir, VampirTrace, Atom, Emacs, Pyke,
Inkscape, Gnuplot, DS9

Data analysis

Extended FOURIER and wavelet analysis, resampling and interpolation of time/space series

Languages

French (native), English (fluent)