DOCUMENT 2

4. CV of the Experienced Researcher

The CV is intrinsic to the evaluation of the whole proposal and is assessed throughout the 3 evaluation criteria by the expert evaluators.

This section should be limited to maximum 5 pages and should include **the standard academic and research record.** Any research career gaps and/or unconventional paths should be clearly explained so that this can be fairly assessed by the independent evaluators.

The *experienced researchers* must provide a list of achievements reflecting their track record, and this may include, if applicable:

1. **Publications** in **peer-reviewed scientific journals, peer-reviewed conference proceedings and/or monographs** of their respective research fields, indicating also the number of citations (excluding self-citations) they have attracted.
2. Granted **patent(s)**.
3. **Research monographs, chapters** in collective volumes and any translations thereof.
4. **Invited presentations** to peer-reviewed, internationally established conferences and/or international advanced schools.
5. **Research expeditions** that the *experienced researcher* has led.
6. **Organisation of International conferences** in the field of the researcher (membership in the steering and/or programme committee).
7. Examples **of participation in industrial innovation**.
8. **Prizes and Awards**.
9. Funding received so far
10. Supervising, mentoring activities, if applicable.

ILEYK EL MELLAH
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French citizen

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Personal webpage : here

EDUCATION

2016 - **PhD thesis supervised by Fabien Casse & Andrea Goldwurm on *Numerical simulations of wind accretion onto compact bodies.***
AstroParticule & Cosmology laboratory (APC) - Paris 7 Univ.

2013 - **Master degree in Astrophysics**
Observatory of Paris. Obtained with distinction

2010-12 – **Normalien at the Ecole Normale Supérieure of Cachan**

2011-12 – **Research internship and graduate courses**
MIT, Cambridge

2010-11 - **French Agrégation of Physics & Chemistry** - ENS of Cachan
Rank : 2nd in 1,409 candidates

2008-10 – **Bachelor degree in Fundamental Physics**-ENS/Paris 6 Univ.
Obtained with honours

2006-08 - **Preparatory classes to Grandes Ecoles**
Lycée Janson-de-Sailly, Paris

RESEARCH

2016 - **PhD thesis supervised by Fabien Casse & Andrea Goldwurm on *Numerical simulations of wind accretion onto compact bodies.***
AstroParticule & Cosmology laboratory (APC) - Paris 7 Univ.

2011-12 - **One-year internship supervised by Saul Rappaport on *Monitoring of close-in binary stars and short period exoplanets***
Data analysis and models of light curves from the Kepler satellite
Kavli Institute for Astrophysics - MIT

Ap-Ag 2010 – **Internship supervised by J.-F. Lestrade on *Gravitational perturbations of debris discs by a passing-by star***
LESIA - Paris Observatory

Jn-Jl 2009 – **Internship supervised by G. Belmont & P. Robert on *Resampling of the CLUSTER satellites data***
Plasma Physics Laboratory - Vélizy

COMMUNICATION

Peer-reviewed publications

[1] I. El Mellah & F. Casse. *A numerical investigation of wind accretion in persistent Supergiant X-ray Binaries. I - Structure of the flow at the orbital scale* (2016) - under reviewing

[2] I. El Mellah & F. Casse. *A Numerical simulations of axisymmetric hydrodynamical Bondi-Hoyle accretion on to a compact object* (2015) - MNRAS 454 (3): 2657-2667

[3] R. Sanchis-Ojeda, S. Rappaport, J. Winn, M. Kotson, A. Levine, I. El Mellah. *The Shortest-period Planets Found with Kepler* (2014) - ApJ, vol. 787:1 18pp - 29 cit.

[4] 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 - 57 cit.

[5] 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 - 72 cit.

Main oral contributions

Sp 2016 - **Super-Eddington accretion on compact objects**

Arbatax conference center - 20’ talk

Ag 2016 - **Monthly Astrophysics seminar**

Department of Physics and Astronomy, Aarhus University - 50’ invited talk

Ap 2016 - **Weekly High Energy Astrophysics seminar**

APC laboratory - 40’ invited talk

Ap 2016 - **Monthly CmPA seminar**

KU Leuven, Center for mathematical Plasma Astrophysics - 50’ invited talk

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

TEACHING

2014-15 - **Classical Mechanics, 1st year** – Paris 7 Univ.

2013 – **Physics for Medical studies, 1st year** - Paris 7 Univ.

2013 – **Deterministic systems & signals, 4th year** - Paris 7 Univ.

2012-13 – **Private lessons with the company *Cours Thalès*** – Paris

2011 – **French Agrégation of Physics & Chemistry**

2009-10 – **Teaching assistant at the high school Eiffel** - Cachan

OUTREACH

Ap-Nv 2015 – **Community manager of the Young Physicists Meeting**

Oc 2015 – **Festival of Science** - Paris 7 Univ.

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

2016 - Computing time on the CINES clusters : 300 kh·cpu

2015 - Computing time on the CINES clusters : 300 kh·cpu

2013 - 3-years PhD fellowship from the ENS of Cachan

2013 - 3-years teaching assistant grant from the Paris 7 University

2012 - 1-week observing time at the Mont Mégantic Observatory (Canada)

2011 - French Agrégation of Physics and Chemistry - Rank : 2nd / 1,409

2010 - 2-years fellowship from the ENS of Cachan as a normalien

CONFERENCES & SCHOOLS

Sp 2016 - Super-Eddington accretion on compact objects - Arbatax, IT
Talk

My 2016 - 6th Les Houches school in Numerical Physics - Les Houches, FR
Poster

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 (cubic spline and Whittaker-Shannon interpolations)

Languages

French (native), English (fluent)

5. Capacity of the Participating Organisations

Beneficiary: Katholieke Universiteit Leuven	
General Description	*KU Leuven has a large tradition on education and research that dates back six centuries. It is the largest university of Belgium in terms or research funding and expenditure. KU Leuven employs about 7000 researchers (annual report 2015) and has extensive experience in coordinating and participating in EU-funded research, and was ranked 6th in acquired European FP7 projects (April 2016). The Centre for mathematical Plasma Astrophysics (CmPA) was founded in 1992 and concentrates research on the dynamical interaction between plasmas – the most abundant state of known matter in our universe – and magnetic fields. It participated/coordinated various EC projects (Swiff, Soteria, eHeroes, DEEP-ER, SOLSPANET, ...).*
Role and Commitment of key persons (supervisor)	*Prof. dr. Rony Keppens (Full professor, Division Chair for CmPA) will closely collaborate with the applicant, provide expert advice on numerical aspects and ensure access to High Performance Computing (HPC) platforms. He coordinates a team of 10 researchers, and safeguards their complementarity and cross-fertilization.*
Key Research Facilities, Infrastructure and Equipment	*KU Leuven is a large university with lively scientific activity. The CmPA has 35 researchers and 5 staff members, and owns a suite of powerful multi-core parallel desktops. The CmPA has gained significant expertise in HPC, exploiting the Flemish Supercomputing Centre (VSC , see www.vscentrum.be, for Tier-1 and Tier-2) and the European Funded PRACE (www.prace-ri.eu, for Tier-0 access).*
Independent research premises?	*Access to VSC facilities is possible for all researchers in Flemish universities. Tier-1 access is through FWO-reviewed project applications, and Tier-2 infrastructure can be funded from ongoing research projects. PRACE access is handled by project applications at European level, with active CmPA participation.*
Previous Involvement in Research and Training Programmes	*Prof. Keppens has been involved in many national and international interdisciplinary research projects during his career (e.g. Solaire Marie Curie RTN 2006-2011; EC FP7 SWIFF work package leader 2012-2014; COST action MP0905, 2010-2014). He was co-investigator in a KU Leuven project on `Solar and space plasma physics' from 2008-2013, as well as in an interdisciplinary project on `Exo-planet atmosphere modeling' (2012-2015). He promoted 8 PhDs and has 5 PhDs ongoing.*
Current involvement in Research and Training Programmes	*Prof. Keppens currently coordinates a national, BELSPO funded Intra-University Attraction Pole network (CHARM, IAP P7-08, 2012-2017, 3 Meuro), with 7 partners. He supervises several PhD and postdoc fellows funded by FWO and BELSPO.*
Relevant Publications and/or research/innovation products	`Formation and plasma circulation of solar prominences', *C. Xia & R. Keppens, 2016, ApJ* ***833****, 22.* `Pinwheels in the sky, with dust: 3D modelling of the Wolf-Rayet 98a environment', *T. Hendrix, R. Keppens, A.J. van Marle, P. Camps, M. Baes & Z. Meliani, 2016, MNRAS* ***460****, 3975-3991.* `The SS433 jet from subparsec to parsec scales', *R. Monceau-Baroux, O. Porth, Z. Meliani, & R. Keppens, 2015, Astron. & Astrophys.* ***574****, A143.* `Interacting tilt and kink instabilities in repelling current channels', *R. Keppens, O. Porth, & C. Xia, 2014, ApJ* ***795****, 77.* `Parallel, grid-adaptive approaches for relativistic hydro and magnetohydrodynamics', *R. Keppens, Z. Meliani, A.J. van Marle, P. Delmont, A. Vlasis, & B. van der Holst, 2012, JCP* ***231****, 718-744.* ***(with the MPI-AMRVAC open source community code).***

Partner Organisation Y	
General description	
Key Persons and Expertise (supervisor)	
Key Research facilities, infrastructure and equipment	
Previous and Current Involvement in Research and Training Programmes	
Relevant Publications and/or research/innovation product	*(Max 3)*

6. Ethical Issues

Compliance with the relevant ethics provisions is essential from the beginning to the end of the action and is an integral part of research funded by the European Union within Horizon 2020.

Applicants submitting research proposals for funding within Marie Skłodowska-Curie actions in Horizon 2020 should demonstrate proactively to the REA that they are aware of and will comply with European and national legislation and fundamental ethical principles, including those reflected in the Charter of Fundamental Rights of the European Union[1] and the European Convention on Human Rights and its Supplementary Protocols[2].

Please be aware that it is the applicants' responsibility to identify any potential ethical issue, to handle the ethical aspects of the proposal and to detail how these aspects will be addressed.

The Ethics Review Procedure in Horizon 2020

All proposals above threshold and considered for funding will undergo an Ethics Review carried out by independent ethics experts. When submitting a proposal to Horizon 2020, all applicants are required to complete an "**Ethics Issues Table (EIT)**" in the Part A of the proposal. Applicants who flag ethical issues in the EIT have to also complete a more in depth **Ethics Self-Assessment in Part B**.

The ethics self-assessment will become part of the Grant Agreement and may thus lead to binding obligations that may later on be checked during ethics checks, reviews and audits.

For more details, please refer to the H2020 **"How to complete your Ethics Self- Assessment"** guide[3].

[1] The Charter of Fundamental Rights of the European Union: http://www.europarl.europa.eu/charter/pdf/text_en.pdf

[2] http://www.echr.coe.int/Documents/Convention_ENG.pdf

[3] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/ethics_en.htm

Ethics Self-Assessment (Part B)

The Ethics Self-Assessment must:

1) **Describe how the proposal meets the EU and national legal and ethics requirements of the country/countries where the task raising ethical issues is to be carried out.**

For more information on how to deal with Third Countries please see Article 34 of the Annotated Model Grant Agreement[4], as well as the following link:

http://ec.europa.eu/justice/data-protection/international-transfers/adequacy/index_en.htm

Please list the documents provided with their expiry date.

Ensure early compliance of the proposed research with EU and national legislation on ethics in research. Should your proposal be selected for funding, you will be required to provide as soon as possible the following documents (if applicable):

- an opinion from an Ethics Committee/Authority, required under national law;
- any other ethics-related documents mandatory under EU or national legislation;

If you have not already applied for/received the ethics approval/required ethics documents when submitting the proposal, please indicate in this section the approximate date when you will provide the missing approval/any other ethics documents, to the REA (scanned copy). Please state explicitly that you will not proceed with any research with ethical implications before the REA has received a scanned copy of all documents proving compliance with existing EU/national legislation on ethics.

If these documents are not issued in English, you are encouraged to submit also an English summary (containing in particular, if available, the conclusions of the Committee or Ethics Authority concerned).

If you plan to request these ethics documents specifically for your proposed action*, your request must contain an explicit reference to the* action*'s title.*

2) **Explain in detail how you intend to address the ethical issues flagged, in particular with regard to:**

- the research **objectives** (e.g. study of vulnerable populations, cooperation with a Third Country, etc.);
- the research **methodology** (e.g. clinical trials, involvement of children and related information and consent/assent procedures, data protection and privacy issues related to data collected, etc.);

[4] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

- the potential **impact** of the research (e.g. dual use issues, environmental damage, malevolent use, etc.).
-

7. Letters of Commitment (GF only)

Please use this section only for the Global Fellowships to insert **scanned copies** of the required **Letters of Commitment from the partner organisations in TC.** Minimum requirements for the letter of commitment:

- heading or stamp from the institution;
- up-to-date (i.e. issued after the call publication date, 12 April 2016);
- the text must demonstrate the will to actively participate in the proposed action and the precise role;
- signed by the legal representative.

Please note that proposals failing to comply with the above-mentioned requirements will be declared inadmissible.

ENDPAGE

MARIE SKŁODOWSKA-CURIE ACTIONS

Individual Fellowships (IF)
Call: H2020-MSCA-IF-2016

PART B

"TAcc-NeXB"

This proposal is to be evaluated as:

[Standard EF]