

Dr. Antoine Bret - Curriculum

Universidad de Castilla-La Mancha (UCLM)

School of Industrial Engineering
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Short CV (long version below)

- **Catedrático de Universidad** (Full Professor) – *Universidad de Castilla-La Mancha*, Spain.
 - Full Professor Habilitation (“HDR”), *University Paris VI*, France, 2009.
 - PhD Physics, *Orsay University*, France, 1994.
 - Engineer, “*Supelec*”, France, 1991.
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- Research in plasma physics theory. Stopping power, Fusion (inertial confinement), Instabilities, Collisionless Shocks.
 - 100+ peer-review papers. 30+ invited talks.
 - Frequent Visiting Scholar at the Harvard-Smithsonian Center for Astrophysics.
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- Associate Editor for *Journal of Plasma Physics* (Cambridge Press) since 2012.
 - Chair of the BSAP Program for the 2017 EPS Conference on Plasma Physics (Belfast).
 - Participant in 10+ grants. 1 European grant (EUROfusion). PI or Co-PI of 3.
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- Advisor for 1 PhD Thesis and 20+ Master Thesis (or equivalent).
 - Currently advisor for 1 PhD student in Abu Dhabi.
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- Teaching on Energy and Climate issues since 2004.
 - Advanced Seminar on the Title at “*Instituto de Empresa*” in 2016 and 2020.
 - Author of the textbook *The Energy-Climate Continuum: Lessons from Basic Science and History* (Springer, 2014).

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Catedrático de Universidad (“Full Professor”)

Education History

- 2009** **Full Professor Habilitation (HDR) - University Paris VI Jussieu, France**
Subject: Beam-plasma instabilities in the relativistic regime
Jury: J.M. Rax, R. Schlickeiser, R. Bingham, F. Amiranoff, G. Bonnaud, P. Mora, M. Tagger
- 1994** **PhD in Plasma Physics Theory - University Paris XI Orsay, France**
Advisor: Claude Deutsch - Suma Cum Laude.
Subject: Slowing down of clusters by an electron gas at any degeneracy
Jury: B. Jancovici, M. Fitaire, P. Sigmund, R. Rozet and F.I.B. Williams
- 1991** **Master Gas and Plasma Physics - University Paris XI Orsay, France**
- 1988-1991** **Electrical Engineer - Ecole Supérieure d'Electricité (“SUPELEC”) – France**
- 1985-1988** **Preparation to competitive scientific examinations - Lycée Stanislas, Paris, France**
- Languages** - Fluent in French, English and Spanish

Positions History & Teaching

- Since 2004 -** **Visiting Prof., then Associate Prof., then Full Prof. - UCLM, Spain**
Courses taught: Renewable Energies and Climate Change¹
Fluid Mechanics
Theory of Pumps and Turbines
- 7/2022, 23** **Research Fellow – Black Hole Initiative at Harvard University**
6/2018 **Visiting Scholar - Harvard-Smithsonian Center for Astrophysics - USA**
6-7/2014 & 16 **“Salvador de Madariaga” Fellow (2012)**
1-8/2012 **Research and Plasma Physics Seminars (see arXiv:1205.6259)**
- 01-02/2020** **Adjunct Professor, IE University – Madrid, Spain**
10-11/2016 **Advanced Seminar on “Tips you must know about Climate Change and Energy”**
- 2003-2004** **Oral Examiner in Mathematics - Lycée Stanislas – France**
Courses taught: First- and Second-year College level Mathematics
- 1994-1995** **Assistant Professor (“ATER”, not Tenured) - University Paris XI Orsay – France**
Courses taught: Quantum Mechanics and Related Math – First year level
Plasmas Physics – Master level
- 1991-1995** **Teaching Assistant - University Paris XI Orsay – France**
Supervision of student’s Lab work and Problems sessions
- 1991-1995** **Oral Examiner in Mathematics - Lycée Stanislas - Paris, France**

¹ A textbook has been published from this course, *The Energy Climate Continuum, Lessons from Basic Science and History* (Springer, 2014)

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Research Grants & Projects

Grant Cfp-FSD-AWP24-ENR-03-CEA-03 from EUROfusion

Participants S. Le Pape (PI) + 43

Title *High gain direct drive ignition with Foams as a Pathway to Energy*

Grant PID2021-125550OB-I00 from Spanish Ministerio de Economía y Competitividad

Participants R. Piriz (PI), A. BRET, G. Rodríguez, F. Cobos, S. Piriz.

Title *Inestabilidades hidrodinámicas en fusión inercial y ciencias planetarias*

Grant SBPLY/17/180501/000264 from Castilla-La Mancha Science and Education Council

Participants A. BRET (PI), R. Piriz (co-PI), G. Wouchuk, G. Rodríguez.

Title *Hidrodinámica de la materia con alta densidad de energía*

Grant ENE2016-75703-R from Spanish Science and Education Ministry

Participants R. Piriz (PI), A. BRET (co-PI), G. Wouchuk, G. Rodríguez.

Title *Materia con alta densidad de energía en fusión por confinamiento inercial*

Grant PEII-2014-008-P from Castilla-La Mancha Science and Education Council

Participants G. Wouchuk (PI), R. Piriz, A. Bret, M. Barriga-Carrasco, F. Cobos-Campos, G. Rodríguez

Title *Hidrodinámica de la fusión termonuclear por confinamiento inercial*

Grant ENE2013-45661-C2-1 from Spanish Science and Education Ministry

Participants R. Piriz (PI), G. Wouchuk (co-PI), A. Bret, G. Rodríguez, M. Barriga-Carrasco

Title *Materia con alta densidad de energía en fusión inercial.*

“Salvador de Madariaga” Fellowship from Spanish Science and Education Ministry (2012) - PI

Visiting Scholar at Harvard-Smithsonian CfA

International Space Science Institute, Bern, Switzerland

A. Bykov	<i>Ioffe Institute, Russia</i>	M. Lemoine	<i>IAP, France</i>
M.E. Dieckman	<i>Linköping, Sweden</i>	A. Marcowith (PI)	<i>LPTA, France</i>
L'O.C. Drury, G. Murphy	<i>DIAS, Ireland</i>	G. Pelletier	<i>LAOG, France</i>
J.G. Kirk, B. Reville	<i>MPIK, Germany</i>	A. Spitkovsky, L. Sironi	<i>Princeton, Harvard</i>
B. Lembège	<i>CETP, France</i>	J. Vink	<i>Utrecht university</i>

Title *Fermi shock acceleration process: from non-relativistic to ultra-relativistic shocks*

Grant ENE2009-09276 from Spanish Science and Education Ministry

Participants R. Piriz (PI), G. Wouchuk, A. Bret, C. Huete, G. Rodríguez, M. Barriga-Carrasco.

Title *Materia con alta densidad de energía en fusión por confinamiento inercial.*

Grant FIS2006 from Spanish Science and Education Ministry

Participants R. Piriz (PI), M. Barriga-Carrasco, D. Cortazar, A. Bret.

Title *Física de Plasmas con Alta Densidad de Energía*

Grant PAI08 from Castilla-La Mancha Science and Education Council

Participants G. Wouchuk (PI), A. Bret.

Title *Fenómenos básicos en plasmas densos y a alta temperatura.*

Grant PAI05 from Castilla-La Mancha Science and Education Council

Participants G. Wouchuk (PI), A. Bret.

Title *Inestabilidades en plasmas y fluidos.*

Grant FTN2003 from Spanish Science and Education Ministry

Participants R. Piriz (PI), M. Temporal, M. Barriga-Carrasco, D. Cortazar, A. Bret.

Title *Inestabilidades hidrodinámicas en fusión por confinamiento inercial.*

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Service & Administration

- Boards** *Journal of Plasma Physics (Cambridge Press)* – Associate Editor since 2012
EPS Plasma Physics Conference 2017 – Sub-Chair of the Program Committee
- Referee** *Science, Phys. of Plasmas, PRE, PRL, Phys. Lett. A, J. of Phys. A, Computer Phys. Comm.*
Plasmas Phys. and Controlled Fusion, Laser and Particle Beams, EPL, NJP
Astrophys. Journal, J. of Mathematical Phys., IEEE Transactions on Plasma Science.
- Listed in** *Who's Who in Science and Engineering, Who's Who in the World,*
International Directory of Experts and Expertise, The Cambridge Blue Book 2nd Edition.
- Member** *European Physical Society, Real Sociedad Española de Física, American Physical Society*
- Member of the Academic Committee of the “Máster Universitario en Energías Renovables” (2023-)
Member of the Board of Directors (School of Industrial Engineering, Ciudad Real, Spain, 2008-2011)
Member of the Economic Board (School of Industrial Engineering, Ciudad Real, Spain, 2008-2011)

Books & Outreach

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| The Energy-Climate Continuum
Lessons from Basic Science and History
<i>Springer, 2014</i> | Environment, Energy and Climate Change II
Ch. 1: Energy and Climate: A Global Perspective
<i>Springer, 2015</i> |
| The World is not 6000 years old. So what?
<i>Wipf & Stock, 2014</i> | How Green are Electric or Hydrogen-Powered Cars?
Assessing GHG Emissions of Traffic in Spain
<i>Springer, 2016</i> |
| Del Nilo al Big Bang
Independently published, 2020 | |

Various conferences on Climate Science and related issues – See list of Publications and Talks

Miscellaneous

- 2003** **Minister for a Protestant Church** – *Madrid, Spain*
- 2002** **NGO Project Director** - *HOPE Worldwide France, Paris, France*
Supervision of 3 social workers, Responsible for a Senior Center in Paris
Leading of volunteer teams up to hundreds of people
Fund Raising Organization, Support of a Rumanian Orphanage
- 1996-2002** **System Administrator** - *Eglise du Christ de Paris, Paris, France*
Lotus Notes PC/Mac Network (30 clients) with NT4 Server
Lotus Notes Databases Development, Webmaster
Conference organization (up to 2500+ participants)
- 1995-2002** **Publisher** - *Publications Chrétiennes Internationales, Paris, France*
Direction of 1 employee Leading of volunteer teams
Book translation from English to French
Managing of the publishing chain from manuscript editing to book selling
- 1993-1998** **Volunteer** – *Les petits frères de Pauvres, Paris, France*
- 6-7/1991** **Technical Survey in the United States** - *For the French Commissariat à l'Energie Atomique*
What about Ceramic Composite Materials in the US?