

## Dr. Antoine Bret - Curriculum

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### Universidad de Castilla-La Mancha (UCLM)

School of Industrial Engineering  
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### Associate Professor (Profesor Titular)

#### Education History

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- 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

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- 9/2004 -**      **Visiting Prof., then Tenured Associate Prof. (from 2009)** - *UCLM, Spain*  
*Courses taught:* Renewable Energies and Climate Change - 4 months course<sup>1</sup>  
Theory of Pumps and Turbines - 4 months course
- 10-11/2016**      **Adjunct Professor, IE University – Madrid, Spain**  
Advanced Seminar on "Tips you must know about Climate Change and Energy"
- 6-7/2016**      **Visiting Scholar** - *Harvard-Smithsonian Center for Astrophysics - USA*  
**6-7/2014**      "Salvador de Madariaga" Fellow (2012)  
**1-8/2012**      Research and Plasma Physics Seminars (see arXiv:1205.6259)
- 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*  
*Courses taught:* First and Second years College level Mathematics

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<sup>1</sup> 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

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

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

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

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

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

Topic *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>

Topic: *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. Rodriguez, M. Barriga-Carrasco.

Topic *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.

Topic *Física de Plasmas con Alta Densidad de Energía*

### Grant PAI08 from Castilla-La Mancha Science and Education Council

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

Topic *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.

Topic *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.

Topic *Inestabilidades hidrodinámicas en fusión por confinamiento inercial.*

## Students Supervision<sup>2</sup>

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- 2015** **Final Degree Project** - University Castilla la Mancha – Ciudad Real, Spain  
Student: Jose Ignacio Moreno Perez  
Topic: Asesoramiento energético de un cultivo de biocarburante en Castilla La Mancha
- 2015** **Final Degree Project** - University Castilla la Mancha – Ciudad Real, Spain  
Student: Jesus Montoya Sanchez de Pablo  
Topic: Assessment of GHG emissions from an Hydrogen based energetic model for traffic in Spain
- 2014** **Final Degree Projects (x2)** - University Castilla la Mancha – Ciudad Real, Spain  
Students: Nerea Lopez Torres & Ismael Fernandez Baillo Callejas  
Topic: Estudio de cavitación en bomba

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<sup>2</sup> The topic of the work is in the language of the project.

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- 2010 - 14**    **PhD Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Erica Pérez Álvaro  
*Topic:* Inestabilidades electromagnéticas en un sistema haz-plasma relativista y magnetizado
- 2014**        **Final Degree Projects (x2)** - University Castilla la Mancha – Ciudad Real, Spain  
*Students:* Maria Isabel Cebrian Ruiz & Arantxa Perez Serrano  
*Topic:* Estudio de cavitación en bomba
- 2014**        **Master Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Ramón Atochero Velasco  
*Topic:* Producción de hidrógeno con pilas de combustible “SOEC”
- 2013 - 14**    **Master Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Maria Lopez Miravalles  
*Topic:* Asesoramiento de la electrificación del tráfico sobre las emisiones de GEI
- 2008 - 11**    **Post-Doc (with L.O. Drury et M.E. Dieckmann)** - Dublin Institute for Advanced Studies  
*Student :* G.C. Murphy  
*Topic:* Relativistic Shocks in Gamma Ray Bursts
- 2009**        **Master Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Rubén Jimeno Morón.  
*Topic:* Estabilización del escenario de ignición rápida mediante un haz de protones
- 2008**        **Master Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Leonel Antonio Luna Bello.  
*Topic:* Evaluación del potencial de generación de energía renovable en comunidades rurales del municipio de Bluefields, Nicaragua.
- 2008**        **Master Thesis** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Francisco Javier Marín Fernández  
*Topic:* Inestabilidad de filamentación en un plasma degenerado
- 2006**        **Training Period** - University Castilla la Mancha – Ciudad Real, Spain  
*Student:* Jean-Marie Anfray, Ecole Nationale Supérieure des Techniques Avancées, Paris, France  
*Topic:* Propagation d'un faisceau d'électrons relativistes dans un plasma collisionnel

### Service & Administration

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- Boards**        *Journal of Plasma Physics (Cambridge Press)* – Associate Editor  
*EPS Plasma Physics Conference 2017* – Sub-Chair of the Program Committee
- Referee**        *Science, Phys. of Plasmas, 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.*  
*Israeli Science Foundation, FONDECYT (Chile), ANR (France)*
- 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 2<sup>nd</sup> Edition.*
- Member**        *European Physical Society, Real Sociedad Española de Física, American Physical Society*
- 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)

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### Books & Outreach

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**The Energy-Climate Continuum**

Lessons from Basic Science and History  
*Springer, 2014*

**Environment, Energy and Climate Change II**

Ch. 1: Energy and Climate: A Global Perspective  
*Springer, 2015*

**The World is not 6000 years old. So what?**

*Wipf & Stock, 2014*

**How Green are Electric or Hydrogen-Powered Cars?:**

**Assessing GHG Emissions of Traffic in Spain**  
*Springer, 2016*

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

### Miscellaneous

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**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?