

## Antoine BRET - Publications and Talks

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### 1. Refereed Papers

- 1.1 BRET A., Pe'er A  
On the Formation and Properties of Fluid Shocks and Collisionless Shocks in Astrophysical Plasmas.  
Journal of Plasma Physics, 84, 905840311, (2018).
- 1.2 Dieckmann M.E., Moreno Q., Doria D, Romagnani L., Sarri G, Folini D, Walder R, BRET A., Dhumi  
Expansion of a radially symmetric blast shell into a uniformly magnetized plasma.  
Physics of Plasmas, 25, 52108, (2018).
- 1.3 Dieckmann M.E., BRET A.  
Electrostatic and magnetic instabilities in the transition layer of a collisionless weakly relativistic pair shock.  
Monthly Notices of the Royal Astronomical Society, 473, 198, (2018).
- 1.4 Dieckmann M.E., Folini D, Walder R, Sarri G, BRET A., Doria D, Ahmed H, Romagnani L., Borghesi M  
Electrostatic shock waves in the laboratory and astrophysics: similarities and differences.  
Plasma Physics and Controlled Fusion, 60, 14014, (2018).
- 1.5 Dieckmann M.E., Folini D, Walder R, Romagnani L., Dhumières E., BRET A., Karlsson T., Ynnerm  
Emergence of MHD structures in a collisionless PIC simulation plasma.  
Physics of Plasmas, 24, 94502, (2017).
- 1.6 Dieckmann M.E., Doria D, Ahmed H, Romagnani L., Sarri G, Folini D, Walder R, BRET A., Borghesi M  
Expansion of a radial plasma blast shell into an ambient plasma.  
Physics of Plasmas, 24, 94501, (2017).
- 1.7 BRET A., Pe'er A, Sironi L. Dieckmann M.E., Narayan R.  
Departure from MHD prescriptions in shock formation over a guiding magnetic field.  
Laser and Particles Beams, 35, 513, (2017).
- 1.8 BRET A., Dieckmann M.E.  
Hierarchy of instabilities for two counter-streaming magnetized pair beams: influence of field obliquity.  
Physics of Plasmas, 24, 62105, (2017).
- 1.9 BRET A., Peer A, Sironi L., Sadowski O, Narayan R.  
Kinetic inhibition of shock formation in the presence of a parallel magnetic field.  
Journal of Plasma Physics, 83, 715830201, (2017).
- 1.10 Dieckmann M.E., BRET A.  
Simulation study of the formation of a non-relativistic pair shock.  
Journal of Plasma Physics, 83, 905830104, (2017).
- 1.11 Dieckmann M.E., Ahmed H, Soria DD, Sarri G, Walder R, Folini D, BRET A., Ynnerman A, Borghesi M  
Experimental Observation of Thin-shell Instability in a Collisionless Plasma.  
Astrophysical Journal Letters, 834, 21, (2017).
- 1.12 Stockem A., BRET A., Sinha U.  
Shock formation in magnetised electron-positron plasmas: mechanism and timing.  
New Journal of Physics, 18, 105002, (2016).

## Antoine BRET - Publications and Talks

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- 1.13** BRET A.  
Particles trajectories in Weibel magnetic filaments with a flow-aligned magnetic field.  
Journal of Plasma Physics, 82, 905820403, (2016).
- 1.14** BRET A.  
Hierarchy of instabilities for two counter-streaming magnetized pair beams.  
Physics of Plasmas, 23, 62122, (2016).
- 1.15** BRET A., Stockem A., Narayan R., Ruyer C., Dieckmann M.E., Silva L.O.  
Theory of the formation of a collisionless Weibel shock: pair vs. electron/proton plasmas.  
Laser and Particles Beams, 34, 362, (2016).
- 1.16** Marcowith A, BRET A., Bykov A., Dieckmann M.E., Drury L, Lembège B, Lemoine M., Morlino G, M  
The microphysics of collisionless shock waves (REVIEW ARTICLE).  
Reports on Progress in Physics, 79, 46901, (2016).
- 1.17** Stockem A., BRET A., Fonseca R.A, Silva L.O.  
Physics of collisionless shocks - theory and simulation.  
Plasma Physics and Controlled Fusion, 58, 14005, (2016).
- 1.18** Dieckmann M.E., Ahmed H, Soria DD, Sarri G, Walder R, Folini D, BRET A., Ynnerman A,  
Borghesi M  
A thin-shell instability in collisionless plasma.  
Physical Review E, 92, 31101, (2015).
- 1.19** BRET A.  
Particles trajectories in magnetic filaments.  
Physics of Plasmas, 22, 72116, (2015).
- 1.20** Stockem A., BRET A., Fonseca R.A, Silva L.O.  
Shock formation in electron-ion plasmas: mechanism and timing.  
Astrophysical Journal Letters, 803, 29, (2015).
- 1.21** BRET A.  
Collisional behaviors of astrophysical collisionless plasmas (REVIEW ARTICLE).  
Journal of Plasma Physics, 81, 455810202, (2015).
- 1.22** Mendonca JT, Haas F., BRET A.  
Influence of flavor oscillations on neutrino beam instabilities.  
Physics of Plasmas, 21, 92117, (2014).
- 1.23** BRET A., Stockem A., Narayan R., Silva L.O.  
Collisionless relativistic shock formation: full formation mechanism and timing.  
Physics of Plasmas, 21, 72301, (2014).
- 1.24** Stockem A., Fiuza F., BRET A., Fonseca R.A, Silva L.O.  
Exploring the nature of collisionless shocks under laboratory conditions.  
Nature Scientific Reports, 4, 3934, (2014).
- 1.25** BRET A.  
Robustness of the filamentation instability in arbitrarily oriented magnetic field: Full 3D calculation.  
Physics of Plasmas, 21, 22106, (2014).

## Antoine BRET - Publications and Talks

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- 1.26** BRET A., Piriz A. R. , Tahir N.A.  
Imprint reduction in rotating heavy ions beam energy deposition.  
Proceeding of 19th International Symposium on Heavy Ion Inertial Fusion, 8/2012.  
Nuclear Instruments and Methods In Physics Research A, 733, 200, (01/01/2014).
- 1.27** BRET A.  
Robustness of the filamentation instability for asymmetric plasma shells collision in arbitrarily oriented magnetic field.  
Physics of Plasmas, 20, 104503, (2013).
- 1.28** BRET A., Stockem A., Fiuza F., Perez Alvaro E, Ruyer C., Narayan R., Silva L.O.  
The formation of a collisionless shock.  
Laser and Particles Beams, 31, 487, (2013).
- 1.29** BRET A., Stockem A., Fiuza F., Ruyer C., Gremillet L., Narayan R., Silva L.O.  
Relativistic collisionless shock formation in pair plasmas.  
Journal of Plasma Physics, 79, 367, (2013).
- 1.30** BRET A., Fiuza F., Gremillet L., Narayan R., Perez Alvaro E, Ruyer C., Silva L.O., Stockem A.  
Theoretical aspects of the Fireball model .  
Proceeding of Fall 2012 gamma-ray burst symposium, 10/2012.  
European Astronomical Society Publications Series, 61, 295, (01/06/2013).
- 1.31** Perez Alvaro E, BRET A.  
Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
Proceeding of Fall 2012 gamma-ray burst symposium, 10/2012.  
European Astronomical Society Publications Series, 61, 135, (01/06/2013).
- 1.32** BRET A., Stockem A., Fiuza F., Ruyer C., Gremillet L., Narayan R., Silva L.O.  
Collisionless shock formation, spontaneous electromagnetic fluctuations, and streaming instabilities .  
Physics of Plasmas, 20, 42102, (2013).
- 1.33** Niemiec J., Pohl M., BRET A., Wieland V.  
Nonrelativistic Parallel Shocks in Unmagnetized and Weakly Magnetized Plasmas.  
Astrophysical Journal, 759, 73, (2012).
- 1.34** Dieckmann M.E., BRET A., Sarri G, Perez Alvaro E, Kourakis I, Borghesi M  
Particle simulation study of electron heating by counterstreaming ion beams ahead of supernova remnant shocks.  
Plasma Physics and Controlled Fusion, 54, 85015, (2012).
- 1.35** BRET A., Piriz A. R. , Tahir N.A.  
Harmonic analysis of irradiation asymmetry for cylindrical implosions driven by high-frequency rotating ion beams.  
Physical Review E, 85, 36402, (2012).
- 1.36** BRET A., Haas F.  
Quantum effects in beam-plasma instabilities.  
Proceeding of ITCPS: Strongly Coupled Ultra-cold and Quantum Plasmas , 9/2011.  
AIP Conference Proceedings, 1421, 156, (15/02/2012).

## Antoine BRET - Publications and Talks

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- 1.37** Dieckmann M.E., Sarri G, Murphy G, BRET A., Romagnani L., Kourakis I, Borghesi M, Ynnerman A, Drury L  
PIC simulation of a thermal anisotropy-driven Weibel instability in a circular rarefaction wave.  
New Journal of Physics, 14, 23007, (2012).
- 1.38** Stroman T., Pohl M., Niemiec J., BRET A.  
Could Cosmic Rays Affect Instabilities In The Transition Layer Of Nonrelativistic Collisionless Shocks?  
Astrophysical Journal, 746, 24, (2012).
- 1.39** Haas F., BRET A.  
Nonlinear low-frequency collisional quantum Buneman instability.  
Europhysics Letters, 97, 26001, (2012).
- 1.40** BRET A.  
Rigorous merging of Two-Stream and Buneman instabilities.  
Physica Scripta, 84, 65507, (2011).
- 1.41** Nakar E., BRET A., Milosavljevic M  
Two-stream-like Instability in Dilute Hot Relativistic Beams and Astrophysical Relativistic Shocks.  
Astrophysical Journal, 738, 93, (2011).
- 1.42** Sarri G, Murphy G, Dieckmann M.E., BRET A., Quinn K, Kourakis I, Borghesi M, Drury L, Ynnerman A  
Two-dimensional particle-in-cell simulation of a plasma expansion into a rarefied medium.  
New Journal of Physics, 13, 73023, (2011).
- 1.43** BRET A., Perez Alvaro E  
Robustness of the Weibel instability as shock mediator in arbitrarily oriented magnetic field.  
Physics of Plasmas, 18, 80706, (2011).
- 1.44** BRET A., Haas F.  
Quantum kinetic theory of the filamentation instability.  
Physics of Plasmas, 18, 72108, (2011).
- 1.45** BRET A.  
Intuitive calculation of the relativistic Rayleigh-Taylor instability linear growth rate.  
Laser and Particle Beams, 29, 255, (2011).
- 1.46** BRET A., Gremillet L., Dieckmann M.E.  
Multidimensional Electron Beam-Plasma Instabilities in the Relativistic Regime (REVIEW ARTICLE).  
Physics of Plasmas, 17, 120501, (2010).
- 1.47** Murphy G, Dieckmann M.E., BRET A., Drury L  
Magnetic field amplification and electron acceleration to near-energy equipartition with ions by a mildly relativistic quasi-parallel plasma protoshock.  
Astronomy & Astrophysics, 524, 84, (2010).
- 1.48** BRET A., Dieckmann M.E., Gremillet L.  
Recent progresses in relativistic beam-plasma instability theory.  
Annales Geophysicae, 28, 2127, (2010).

## Antoine BRET - Publications and Talks

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- 1.49** BRET A.  
Collisional and collisionless beam plasma instabilities.  
Laser and Particles Beams, 28, 491, (2010).
- 1.50** BRET A., Haas F.  
Connection between the two branches of the quantum two-stream instability across the k space.  
Physics of Plasmas, 17, 52101, (2010).
- 1.51** BRET A., Dieckmann M.E.  
How large can be the electron to proton mass ratio in Particle-In-Cell simulations of unstable systems?  
Physics of Plasmas, 17, 32109, (2010).
- 1.52** BRET A., Gremillet L., Bénisti D.  
Exact relativistic kinetic theory of the full unstable spectrum of an electron beam-plasma system wi  
Physical Review E, 81, 36402, (2010).
- 1.53** Niemiec J., Pohl M., BRET A., Stroman T.  
Aperiodic Magnetic Turbulence Produced By Relativistic Ion Beams.  
Astrophysical Journal, 709, 1148, (2010).
- 1.54** Dieckmann M.E., BRET A.  
Electric field generation by the electron beam filamentation instability: Filament size effects.  
Physica Scripta, 81, 15502, (2010).
- 1.55** Haas F., BRET A., Shukla P.K.  
Physical interpretation of the quantum two-stream instability.  
Physical Review E, 80, 66407, (2009).
- 1.56** Deutsch C., Zwicknagel G, BRET A.  
Ultra-cold Plasmas: A Paradigm for Strongly Coupled and Classical Electron Fluid.  
Journal of Plasma Physics, 75, 799, (2009).
- 1.57** BRET A.  
Stable transport in proton driven Fast Ignition.  
Physics of Plasmas, 16, 94505, (2009).
- 1.58** BRET A.  
Weibel, Two-Stream, Filamentation, Oblique, Bell, Buneman... which one grows faster ? .  
Astrophysical Journal, 699, 990, (2009).
- 1.59** BRET A., Marin Fernandez FJ., Anfray JM.  
Unstable spectrum of a relativistic electron beam interacting with a quantum collisional plasma:  
application to the Fast Ignition Scenario.  
Plasma Physics and Controlled Fusion, 51, 75010, (2009).
- 1.60** Dieckmann M.E., BRET A.  
PIC simulation of an electron double layer in a nonrelativistic plasma flow: Electron acceleration to  
ultrarelativistic speeds.  
Astrophysical Journal, 694, 154, (2009).
- 1.61** BRET A.  
Fast growing instabilities for non-parallel flows.  
Physics Letters A, 373, 871, (2009).

## Antoine BRET - Publications and Talks

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- 1.62** Deutsch C., BRET A., Firpo M.-C., Gremillet L., Lefevbre E, Lifshitz A.  
Onset of Coherent Electromagnetic Structures in the REB-DT Fuel Interaction of Fast Ignition Concern.  
Proceeding of 12th Latin American Workshop on Plasma Physics, 9/2007.  
Physica Scripta, 131, 14036, (05/12/2008).
- 1.63** BRET A., Deutsch C.  
Correlated stopping power of a chain of N charges.  
Journal of Plasma Physics, 74, 595, (2008).
- 1.64** Deutsch C., BRET A., Firpo M.-C., Gremillet L., Lefevbre E, Lifshitz A.  
Onset of Coherent Electromagnetic Structures in the REB-DT Fuel Interaction of Fast Ignition Concern.  
Laser and Particles Beams, 26, 157, (2008).
- 1.65** BRET A., Dieckmann M.E.  
Relativistic electron beam driven instabilities in the presence of an arbitrarily oriented magnetic field.  
Physics of Plasmas, 15, 62102, (2008).
- 1.66** BRET A., Gremillet L., Bénisti D., Lefevbre E  
Exact relativistic kinetic theory of an electron beam-plasma system: hierarchy of the competing mo  
Physical Review Letters, 100, 205008, (2008).
- 1.67** BRET A.  
Filamentation instability in a quantum magnetized plasma.  
Physics of Plasmas, 15, 22109, (2008).
- 1.68** Dieckmann M.E., BRET A., Shukla P.K.  
Electron surfing acceleration by mildly relativistic beams: wave magnetic field effects .  
New Journal of Physics, 10, 13029, (2008).
- 1.69** BRET A., Dieckmann M.E.  
Ions motion effects on the full unstable spectrum in relativistic electron beam plasma interaction.  
Physics of Plasmas, 15, 12104, (2008).
- 1.70** Dieckmann M.E., BRET A., Shukla P.K.  
Comparing electrostatic instabilities driven by mildly and highly relativistic proton beams.  
Plasma Physics and Controlled Fusion, 49, 1989, (2007).
- 1.71** BRET A.  
Filamentation instability in a quantum plasma.  
Physics of Plasmas, 14, 84503, (2007).
- 1.72** BRET A., Gremillet L., Deutsch C.  
Oblique instabilities in relativistic electron beam plasma interaction.  
Proceeding of 16th International Symposium on Heavy Ion Inertial Fusion, 7/2006.  
Nuclear Instruments and Methods In Physics Research A, 577, 317, (05/06/2007).
- 1.73** Gremillet L., Benisti D., Lefevbre E, BRET A.  
Linear and nonlinear development of oblique beam-plasma instabilities in the relativistic kinetic regime.  
Physics of Plasmas, 14, 40704, (2007).

## Antoine BRET - Publications and Talks

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- 1.74** BRET A., Gremillet L., Bellido JC.  
How really transverse filamentation instability is ?  
Physics of Plasmas, 14, 32103, (2007).
- 1.75** BRET A., Deutsch C.  
About the most unstable modes encountered in beam plasma interaction physics.  
Laser and Particles Beams, 25, 117, (2007).
- 1.76** BRET A.  
Quasi exact model for the anisotropy driven Weibel instability all over Fourier space.  
Contributions to Plasma Physics, 47, 133, (2007).
- 1.77** BRET A.  
Beam plasma dielectric tensor with Mathematica.  
Computer Physics Communications, 176, 362, (2007).
- 1.78** BRET A., Gremillet L.  
Oblique Instabilities in Relativistic Electron Beam Plasma Interaction (Invited Paper).  
Proceeding of 33nd EPS Plasma Physics Conference, 6/2006.  
Plasma Physics and Controlled Fusion, 48, 405, (15/11/2006).
- 1.79** BRET A.  
A simple analytical model for the Weibel instability.  
Physics Letters A, 359, 52, (2006).
- 1.80** BRET A., Dieckmann M.E., Deutsch C.  
Oblique electromagnetic instabilities for a hot relativistic beam interacting with a hot and magnetized plasma.  
Physics of Plasmas, 13, 82109, (2006).
- 1.81** BRET A., Deutsch C.  
Density gradient effects on beam plasma linear instabilities for fast ignition scenario.  
Laser and Particles Beams, 24, 269, (2006).
- 1.82** BRET A., Firpo M.-C., Deutsch C.  
Characterization of the initial filamentation of a relativistic electron beam passing through a plasma.  
Proceeding of Fourth International Conference on Inertial Fusion Sciences and Applications, 9/2005.
- 1.83** BRET A.  
Oblique electromagnetic instabilities for an ultra relativistic electron beam passing through a plasma.  
Europhysics Letters, 74, 1027, (2006).
- 1.84** BRET A., Deutsch C.  
A fluid approach to linear beam plasma electromagnetic instabilities.  
Physics of Plasmas, 13, 42106, (2006).
- 1.85** BRET A., Deutsch C., Firpo M.-C.  
Between Two Stream and Filamentation Instabilities: Temperature and collisions effects.  
Laser and Particles Beams, 24, 27, (2006).
- 1.86** Dieckmann M.E., Frederiksen J.T., BRET A., Shukla P.K.  
Evolution of the fastest-growing relativistic two-stream mixed-mode instability in plasmas.  
Physics of Plasmas, 13, 112110, (2006).

## Antoine BRET - Publications and Talks

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- 1.87** BRET A., Deutsch C.  
Stabilization of the filamentation instability and the anisotropy of the background plasma.  
Physics of Plasmas, 13, 22110, (2006).
- 1.88** BRET A., Deutsch C.  
Beam plasma electromagnetic instabilities in a smooth density gradient: Application to the Fast Ignition Scenario.  
Physics of Plasmas, 12, 102702, (2005).
- 1.89** BRET A., Deutsch C.  
Hierarchy of beam plasma instabilities up to high beam densities for Fast Ignition Scenario.  
Physics of Plasmas, 12, 82704, (2005).
- 1.90** Deutsch C., BRET A., Fromy P.  
Mitigation of Electromagnetic instabilities for Fast Ignition Scenario.  
Contributions to Plasma Physics, 45, 254, (2005).
- 1.91** Deutsch C., BRET A., Fromy P.  
Mitigation of electromagnetic instabilities in fast ignition scenarii.  
Laser and Particles Beams, 23, 5, (2005).
- 1.92** BRET A., Deutsch C.  
Mixed two-stream filamentation modes in a collisional plasma.  
Physics of Plasmas, 12, 82109, (2005).
- 1.93** Deutsch C., BRET A., Firpo M.-C., Fromy P.  
Interplay of collisions with quasi-linear growth rates of relativistic e-beam driven instabilities in a superdense plasma.  
Physical Review E, 72, 26402, (2005).
- 1.94** BRET A., Firpo M.-C., Deutsch C.  
Electromagnetic instabilities for relativistic beam-plasma interaction for whole k space: non relativistic beam and plasma temperature effects.  
Physical Review E, 72, 16403, (2005).
- 1.95** BRET A., Firpo M.-C., Deutsch C.  
Transverse beam temperature effects on mixed Two-Stream/Filamentation unstable modes.  
Proceeding of 15th International Symposium on Heavy Ion Inertial Fusion, 6/2004.  
Nuclear Instruments and Methods In Physics Research A, 544, 427, (01/03/2005).
- 1.96** BRET A., Firpo M.-C., Deutsch C.  
Characterization of the initial filamentation of a relativistic electron beam passing through a plasma.  
Physical Review Letters, 94, 115002, (2005).
- 1.97** BRET A., Firpo M.-C., Deutsch C.  
Bridging the Gap between Two Stream and Filamentation Instabilities.  
Laser and Particles Beams, 23, 375, (2005).
- 1.98** BRET A., Firpo M.-C., Deutsch C.  
Collective electromagnetic modes for beam-plasma interaction for whole k space.  
Physical Review E, 70, 46401, (2004).

## Antoine BRET - Publications and Talks

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- 1.99 BRET A., Deutsch C.  
Dicluster stopping in a two-dimension electron fluid.  
Proceeding of Symposium on Heavy Ion Inertial Fusion, 9/1997.  
Nuclear Instruments and Methods In Physics Research A, 415, 703, (01/03/1998).
  
- 1.100 Deutsch C., BRET A., Martinez-Val J.M., Tahir N.A.  
Inertial fusion driven by intense cluster ion beams.  
Fusion Technology, 31, 1, (1997).
  
- 1.101 BRET A.  
Stopping power and straggling of an extended charge in a free-electron gas.  
Nuclear Instruments and Methods in Physics Research B, 88, 107, (1994).
  
- 1.102 BRET A., Deutsch C.  
Ion stopping in two-dimensional electron layers.  
Europhysics Letters, 25, 291, (1994).
  
- 1.103 BRET A., Deutsch C.  
Dielectric response function and stopping power of a two-dimensional electron gas.  
Physical Review E, 48, 2994, (1993).
  
- 1.104 BRET A., Deutsch C.  
Straggling of an extended charge distribution in a partially degenerate plasma.  
Physical Review E, 48, 2989, (1993).
  
- 1.105 BRET A., Deutsch C.  
Stopping power of extended cluster and ion charge distributions in an arbitrarily degenerated electron fluid.  
Physical Review E, 47, 1276, (1993).

## 2. Conferences - Invited Talks

- 2.1 Inhibition d'un choc MHD en présence d'un champ magnétique parallèle.  
4th Workshop Micro-Astro-Chocs, Paris, France, 6/2017.
  
- 2.2 Inhibition of MHD-shock in the presence of a parallel magnetic field.  
The 1st JPP Frontiers in Plasma Physics Conference, Abbazia di Spineto, Italy, 5/2017.
  
- 2.3 Inhibition of MHD-shock in the presence of a parallel magnetic field.  
8th International Conference on the Frontiers of Plasma Physics and Technology, Viña del Mar, Chile, 5/2017.
  
- 2.4 Formation d'un choc sans collisions et trajectoires de particules chargées dans des filaments magnétiques.  
2nd Workshop Micro-Astro-Chocs, Paris, France, 5/2016.
  
- 2.5 The basics and not-so-basic physics of beam plasmas instabilities.  
Feedback over 44 orders of magnitude: from Gamma-rays to the Universe, Toronto, Canada, 3/2016.
  
- 2.6 Collisional behaviors of astrophysical collisionless plasmas.  
AGU Fall Meeting, San Francisco, USA, 12/2015.
  
- 2.7 The formation of a collisionless Weibel shock.  
Atelier Chocs sans Collisions, Bordeaux, France, 5/2014.

## Antoine BRET - Publications and Talks

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- 2.8** The Formation of a Collisionless Shock.  
6th International Conference on the Frontiers of Plasma Physics and Technology, Gaborone, Botswana, 3/2013.
- 2.9** Collisionless shock formation.  
International Space Science Institute (ISSI) workshop "Fermi Shock Acceleration Process: From Non-Relativistic to Ultra-Relativistic Shocks", Bern, Switzerland, 12/2012.
- 2.10** Spontaneous electromagnetic fluctuations, beam-plasma instabilities and collisionless shock formation.  
Atelier National Hautes Energies, Paris, France, 10/2012.
- 2.11** Collisionless shock formation.  
International Topical Conference on Plasma Science: Advanced Plasma Concepts, Faro, Portugal, 9/2012.
- 2.12** Beam-plasma instabilities in Quantum Plasmas.  
International Topical Conference on Plasma Science: Strongly Coupled Ultra-cold and Quantum Plasmas, Lisbon, Portugal, 9/2011.
- 2.13** Introduction to microinstabilities in collisionless shocks I-linear theory.  
International Space Science Institute (ISSI) workshop "Fermi Shock Acceleration Process: From Non-Relativistic to Ultra-Relativistic Shocks", Bern, Switzerland, 2/2011.
- 2.14** Recent progresses in Relativistic beam-plasma instabilities.  
Dynamical Processes in Space Plasmas (Isradynamics), Ein Bokek, Israel, 4/2010.
- 2.15** Plasma Instabilities in Relativistic Shocks.  
Nonlinear Processes in Astrophysical Plasmas: Particle Acceleration, Magnetic Field Amplification, and Radiation Signatures, Kavli Institute for Theoretical Physics, Santa Barbara, USA, 9/2009.
- 2.16** Aperiodic Magnetic Turbulence Produced by Streaming CRs.  
KITP Program: Particle Acceleration in Astrophysical Plasmas, Kavli Institute for Theoretical Physics, Santa Barbara, USA, 7/2009.
- 2.17** Streaming instabilities in the relativistic regime.  
12th Marcel Grossmann Meeting on General Relativity and Gravitation, Paris, France, 7/2009.
- 2.18** A unified kinetic model of relativistic electron beam-plasma instabilities.  
Rencontre CIRM 2008: Nouvelles voies pour la modélisation de l'interaction laser-matière, Marseil
- 2.19** Instabilities of a relativistic electron beam in a plasma.  
Kinetic Modelling of Astrophysical Plasmas, Cracow, Poland, 10/2008.
- 2.20** Fast Ignitor Physics.  
XII Latino-American Workshop on Plasma Physics , Caracas, Venezuela, 9/2007.
- 2.21** An exact linear kinetic model of the fully relativistic current filamentation instability with smooth distribution functions.  
Fifth International Conference on Inertial Fusion Sciences and Applications, Kobe, Japan, 9/2007.

## **Antoine BRET - Publications and Talks**

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- 2.22** Onset of coherent electromagnetic structures in the REB-DT fuel interaction of fast ignition concern.  
International Conference on the Frontiers of Plasma Physics and Technology, Bangkok, Thailand, 3/2007.
- 2.23** Fast Ignition-related kinetic simulations of hot electron transport.  
33nd EPS Plasma Physics Conference, Rome, Italy, 6/2006.
- 2.24** Oblique Instabilities in Relativistic Electron Beam Plasma Interaction.  
33nd EPS Plasma Physics Conference, Rome, Italy, 6/2006.
- 2.25** Beam plasma electromagnetic instabilities in a smooth density gradient.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2006.
- 2.26** Bridging the Gap between Two-Stream and Filamentation Instabilities.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 2/2004.
- 2.27** Stopping power and straggling of an extended charge in a free-electron gas.  
Polyatomic Ion Impact on Solids and Related Phenomena, Saint-Malo, France, 6/1993.

### **3. Conferences - Talks**

- 3.1** On the Formation and Properties of Fluid Shocks and Collisionless Shock in Astrophysical Plasmas.  
45th EPS Conference on Plasma Physics, Praga, Republica Checa, 7/2018.
- 3.2** Collisional and collisionless issues in shock physics.  
38th International Workshop on High Energy Density Physics with Intense Ion and Laser Beams, Hirschegg, Austria, 1/2018.
- 3.3** Kinetic inhibition of MHD shocks in the vicinity of a parallel magnetic field.  
APS Plasma Physics Meeting, Milwaukee, USA, 10/2017.
- 3.4** Inhibition of MHD-shock in the presence of a parallel magnetic field.  
37th International Workshop on High Energy Density Physics with Intense Ion and Laser Beams, Hirschegg, Austria, 1/2017.
- 3.5** Shock Formation in Electron-Ion Plasmas: Mechanism and Timing.  
APS Plasma Physics Meeting, San Jose, USA, 10/2016.
- 3.6** Theory of the formation of a collisionless shock.  
36th International Workshop on High Energy Density Physics with Intense Ion and Laser Beams, Hirschegg, Austria, 1/2016.
- 3.7** Comparing collisionless shocks formation in pair and electron/ion plasmas.  
42nd EPS Conference on Plasma Physics, Lisbon, Portugal, 6/2015.
- 3.8** Collisionless Weibel shocks: Full formation mechanism and timing.  
56th Annual Meeting of the APS Division of Plasma Physics, New Orleans, 10/2014.
- 3.9** The formation of a collisionless shock in relativistic pair plasma.  
34th International Workshop on Physics of High Energy Density in Matter, Hirschegg, Austria, 1/2014.

## Antoine BRET - Publications and Talks

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- 3.10** Energy and climate: A global perspective.  
Congress Energy and Environment Knowledge Week, Toledo, Spain, 11/2013.
- 3.11** Collisionless shock formation, spontaneous electromagnetic fluctuations, and streaming instabilities.  
55th Annual Meeting of the APS Division of Plasma Physics, Denver, USA, 11/2013.
- 3.12** Aspectos teóricos del escenario “Fireball” para Brotes de Rayos Gamma.  
XXXIV Biental de Física de la RSEF, Valencia, Spain, 7/2013.
- 3.13** The formation of a collisionless shock.  
33rd International Workshop on Physics of High Energy Density in Matter, Hirschegg, Austria, 1/2013.
- 3.14** Theoretical aspects of the Fireball model .  
Fall 2012 gamma-ray burst symposium, Marbella, Spain, 10/2012.
- 3.15** Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2012.
- 3.16** Inestabilidad de filamentación con campo magnético arbitrariamente orientado.  
XXXIII Reunión Biental de la RSEF, Santander, Spain, 9/2011.
- 3.17** Kinetic studies of nonrelativistic parallel shocks.  
32st International Cosmic Ray Conference, Beijing, China, 8/2011.
- 3.18** On the proton to electron mass ratio in particle-in-cell simulations.  
38th EPS Plasma Physics Conference, Strasbourg, France, 6/2011.
- 3.19** How large can be the electron to proton mass ratio in particle-in-cell simulations of unstable systems? .  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2011.
- 3.20** Collisional and collisionless beam plasma instabilities.  
52th APS Plasma Physics Meeting, Chicago, USA, 11/2010.
- 3.21** Collisional and collisionless beam plasma instabilities.  
37th EPS Plasma Physics Conference, Dublin, Irland, 6/2010.
- 3.22** Recent results on relativistic electron beam-plasma instabilities.  
Direct Drive and Fast Ignition Workshop, London, UK, 4/2010.
- 3.23** Inestabilidades Haz-Plasma en Régimen Relativista: Papel en Fusión Termonuclear y Astrofísica.  
XXXII Biental de Física de la RSEF, Ciudad Real, Spain, 9/2009.
- 3.24** Magnetic field generation by a relativistic cosmic-ray ion beam in the precursor of parallel shocks.  
31st International Cosmic Ray Conference, Lodz, Poland, 7/2009.
- 3.25** Unstable spectrum of a relativistic electron beam interacting with a quantum collisional plasma: application to the Fast Ignition Scenario.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 2/2009.

## Antoine BRET - Publications and Talks

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- 3.26 Exact Relativistic Kinetic Theory of an Electron Beam-Plasma System.  
6th Direct Drive and Fast Ignition Workshop, Lisbon, Portugal, 5/2008.
- 3.27 Dominant Unstable Mode in Fast Electron Beam Plasma Interaction.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2008.
- 3.28 Onset of Coherent Electromagnetic Structures In the REB-DT Fuel Interaction for Fast Ignition.  
APS Plasma Physics Meeting, Orlando, USA, 11/2007.
- 3.29 Dominant unstable mode in fast electron beam plasma interaction.  
APS Plasma Physics Meeting, Orlando, USA, 11/2007.
- 3.30 Recent progresses in relativistic beam/plasma electromagnetic instabilities.  
Fifth international meeting Theory and numerical simulations of the direct drive inertial fusion, Madrid, Spain, 4/2007.
- 3.31 Surprises in relativistic beam plasma instabilities.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2007.
- 3.32 Unstable oblique electromagnetic modes in the Fast Ignition Scenario.  
16th International Symposium on Heavy Ion Inertial Fusion, St Malo, France, 7/2006.
- 3.33 Fluid approach to relativistic beam/plasma electromagnetic instabilities.  
Fourth international meeting Theory and numerical simulations of the direct drive inertial fusion, Bordeaux, France, 3/2006.
- 3.34 Characterization of the initial filamentation of a relativistic electron beam passing through a plasma.  
Fourth International Conference on Inertial Fusion Sciences and Applications, Biarritz, France, 9/2005.
- 3.35 Characterization of the initial filamentation of a relativistic electron beam passing through a plasma.  
32nd EPS Plasma Physics Conference, Tarragona, Spain, 6/2005.
- 3.36 Taming of Electromagnetic Instabilities in Fast Ignition Scenarios For ICF and REB Stopping.  
Current Trends in International Fusion Research, Washington DC, USA, 3/2005.
- 3.37 Density gradient effects on beam plasma instabilities for Fast Ignition Scenario.  
Workshop on Simulations and theoretical developments on Direct-Drive Inertial Confinement Fusion, Toledo, Spain , 3/2005.
- 3.38 Between Two-Stream and Filamentation Instabilities: Temperature effects.  
Physics of High Energy Density in Matter Workshop, Hirschegg, Austria, 1/2005.
- 3.39 Bridging the Gap between Two-Stream and Filamentation Instabilities.  
2004 International Symposium on Heavy Ion Inertial Fusion, Princeton, USA, 6/2004.
- 3.40 Coulombian Cluster Fragmentation.  
Journée Statistiques l'ESPCI, Paris, France, 1/1995.

## 4. Conferences - Posters

## Antoine BRET - Publications and Talks

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- 4.1** Inhibition of mhd-shock in the presence of a parallel magnetic field.  
44nd EPS Conference on Plasma Physics, Belfast, UK, 6/2017.
- 4.2** Collisionless shocks formation in pair plasmas.  
42nd EPS Conference on Plasma Physics, Lisbon, Portugal, 6/2015.
- 4.3** Assessing the effect of traffic electrification on GHG emissions.  
Congress Energy and Environment Knowledge Week, Toledo, Spain, 10/2014.
- 4.4** Robustness of the filamentation instability in arbitrarily oriented magnetic field.  
56th Annual Meeting of the APS Division of Plasma Physics, New Orleans, 10/2014.
- 4.5** Teoría de la formación de un choque no colisional.  
XXXIV Biental de Física de la RSEF, Valencia, Spain, 7/2013.
- 4.6** Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
Fall 2012 gamma-ray burst symposium, Marbella, Spain, 10/2012.
- 4.7** Harmonic analysis of irradiation asymmetry for cylindrical implosions driven by high-frequency rotating ion beams.  
19th International Symposium on Heavy Ion Inertial Fusion, Berkeley, USA, 8/2012.
- 4.8** Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
NRAO-NAASC 2012 Workshop Outflows, Winds and Jets: From Young Stars to Supermassive Black Holes, Charlotte, USA, 3/2012.
- 4.9** Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
Seventh Conference on Inertial Fusion Sciences and Applications, Bordeaux, France, 9/2011.
- 4.10** Relativistic filamentation instability in an arbitrarily oriented magnetic field.  
38th EPS Plasma Physics Conference, Strasbourg, France, 6/2011.
- 4.11** How large can the electron to proton mass ratio be in particle-in-cell simulations of unstable systems?  
52 APS Plasma Physics Meeting, Chicago, USA, 11/2010.
- 4.12** Exact relativistic kinetic theory of the full unstable spectrum of an electron-beam-plasma system with Maxwell-Juttner distribution functions.  
52 APS Plasma Physics Meeting, Chicago, USA, 11/2010.
- 4.13** Kinetic studies of wave-particle interactions in cosmic-ray acceleration.  
38th Assembly of Committee on Space Research (COSPAR), Bremen, Germany, 7/2010.
- 4.14** Magnetic Turbulence Generated by Streaming Cosmic Rays in the Precursor of Parallel Shocks.  
11th High Energy Astrophysics Division Meeting, Hawaii, USA, 3/2010.
- 4.15** Negative energy modes and the quantum two-stream instability.  
51 APS Plasma Physics Meeting, Atlanta, USA, 11/2009.
- 4.16** Exact relativistic kinetic theory of an electron beam-plasma system hierarchy of the competing modes in the system parameter space.  
35th EPS Conference on Plasma Physics, Hersonissos, Greece, 6/2008.

## Antoine BRET - Publications and Talks

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- 4.17 Beam plasma electromagnetic instabilities in a smooth density gradient: Applications to ICF fast ignition.  
APS Plasma Physics Meeting, Orlando, USA, 11/2007.
- 4.18 Magnetic field effects on instabilities driven by a field-aligned relativistic electron beam and bulk electrons.  
34th EPS Conference on Plasma Physics, Warsaw, Poland, 7/2007.
- 4.19 PIC simulations of relativistic electron flows: The fastest-growing mixed mode and the electromagnetic finite grid instability.  
34th EPS Conference on Plasma Physics, Warsaw, Poland, 7/2007.
- 4.20 Oblique Electromagnetic Modes for a Hot REB in a Hot and Magnetized Plasma.  
APS Plasma Physics Meeting, Philadelphia, USA, 10/2006.
- 4.21 Hierarchy of beam plasma instabilities up to high beam densities for Fast Ignition Scenario.  
APS Plasma Physics Meeting, Denver, USA, 10/2005.
- 4.22 Interplay of collisions with quasi-linear growth rates of relativistic e-beam driven instabilities in a superdense plasma.  
APS Plasma Physics Meeting, Denver, USA, 10/2005.
- 4.23 Collective Electromagnetic Modes for beam-plasma interaction in whole k space.  
APS Plasma Physics Meeting, Savannah, USA, 11/2004.
- 4.24 Correlated Stopping Power in 2D.  
APS Plasma Physics Meeting, New Orleans, USA, 11/1998.
- 4.25 Slowing down of ions in 2D plasma.  
Meeting plasma APS, Minneapolis, USA, 11/1997.
- 4.26 Dicluster stopping in a 2D electron fluid.  
Heavy Ion Fusion 97, Heidelberg, Germany, 9/1997.

## 5. Conference Proceedings

- 5.1 BRET A.  
Streaming instabilities in the relativistic regime.  
Proceeding of 12th Marcel Grossmann Meeting on General Relativity and Gravitation, 7/2009.  
World Scientific, Singapore, , 862, (30/11/2011).
- 5.2 Niemiec J., Pohl M., Stroman T., BRET A.  
Kinetic studies of nonrelativistic parallel shocks.  
Proceeding of 32st International Cosmic Ray Conference, 8/2011.  
, , , (18/08/2011).
- 5.3 BRET A.  
Collisional and collisionless beam plasma instabilities.  
Proceeding of 37th EPS Conference on Plasma Physics, 6/2010.  
European Conference Abstracts, , , (22/06/2010).
- 5.4 BRET A.  
Inestabilidades Haz-Plasma en Régimen Relativista: Papel en Fusión Termonuclear y Astrofísica.  
Proceeding of XXXII Biental de Física y 18º Encuentro Ibérico, 9/2009.  
Biental de la Real Sociedad Española de Física - Comunicaciones Científicas, , 495, (20/10/2009).

## **Antoine BRET - Publications and Talks**

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- 5.5** Niemiec J., Pohl M., BRET A., Stroman T.  
Magnetic field generation by a relativistic cosmic-ray ion beam in the precursor of parallel shocks.  
Proceeding of 31st International Cosmic Ray Conference, 7/2009.  
, , 6, (07/07/2009).
- 5.6** BRET A., Dieckmann M.E., Deutsch C.  
Magnetic field effects on instabilities driven by a field-aligned relativistic electron beam and bulk electrons.  
Proceeding of 34th EPS Conference on Plasma Physics, 7/2007.  
European Conference Abstracts, 31, 2079, (02/07/2007).
- 5.7** Dieckmann M.E., Frederiksen J.T., Bret A., Shukla P.K.  
PIC simulations of relativistic electron flows: The fastest-growing mixed mode and the electromagnetic finite grid instability.  
Proceeding of 34th EPS Conference on Plasma Physics, 7/2007.  
European Conference Abstracts, 31, 2078, (02/07/2007).
- 5.8** BRET A., Firpo M.-C., Deutsch C.  
Characterization of the initial filamentation of a relativistic electron beam passing through a plasma.  
Proceeding of 32nd EPS Plasma Physics Conference, 6/2005.  
European Conference Abstracts, 29, 4035, (27/06/2005).
- 5.9** Deutsch C., BRET A., Eliezer S., Martinez-Val J.M., Tahir N.A.  
Inertial fusion driven by intense cluster ion beams.  
Proceeding of 1st International Symposium on Evaluation of Current Trends in Fusion Research, 11/1994.  
Current Trends in International Fusion Research, 497, 539, (01/03/1997).
- 5.10** BRET A., Deutsch C.  
Cluster Coulomb explosion in a hot plasma interface.  
Proceeding of 7th International Symposium on Heavy Ion Inertial Fusion, 9/1995.  
Fusion Engineering and Design, 32, 517, (01/03/1996).

## **6. Invited Seminars**

- 6.1** Current status of nuclear fusion research.  
Black Hole Initiative, Harvard University, USA, 21/06/2018
- 6.2** Collisionless plasma shocks: Properties, interests, and similarities to fluid shocks.  
MIT, USA, 14/06/2018
- 6.3** 3 not (so) trivial conditions for shock particle acceleration.  
Black Hole Initiative, Harvard University, USA, 11/06/2018
- 6.4** Inhibition of MHD-shock in the presence of a parallel magnetic field .  
Black Hole Initiative, Harvard University, USA, 04/06/2018
- 6.5** Inhibition of MHD-shock in the presence of a parallel magnetic field.  
Institute of Space Science, Barcelona, Spain, 20/01/2017
- 6.6** New wine into old wineskins: collisionless shocks in plasmas.  
UCLA, USA, 19/07/2016
- 6.7** New wine into old wineskins: collisionless shocks in plasmas.  
MIT, USA, 13/07/2016
- 6.8** New wine into old wineskins: collisionless shocks in plasmas.  
Stanford Linear Accelerator, USA, 16/12/2015

## Antoine BRET - Publications and Talks

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- 6.9 New wine into old wineskins: collisionless shocks in plasmas.  
Ecole Normale Supérieure, Lyon, France, 11/12/2015
- 6.10 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Collisionless Shocks in Plasmas.  
Strathclyde University, Glasgow, UK, 09/03/2015
- 6.11 The formation of a collisionless shock.  
ITC Summer Seminars, Harvard-Smithsonian Center for Astrophysics, 26/06/2014
- 6.12 The formation of a collisionless shock.  
The University of Texas at Austin, 18/06/2014
- 6.13 Streaming instabilities in the relativistic regime.  
University College Cork, Ireland, 10/03/2014
- 6.14 Mechanism of formation of collisionless shocks and role in astrophysics.  
University College Cork, Ireland, 10/03/2014
- 6.15 Mechanism of formation of collisionless shocks.  
Institut de Ciències de l'Espai, Barcelona, Spain, 08/01/2014
- 6.16 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Collisionless Shocks in Plasmas.  
Universidad Carlos III, Madrid, Spain, 11/12/2013
- 6.17 Gamma Ray Bursts, High Energy Cosmic Rays and Collisionless Shocks Generation.  
Ecole Normale Supérieure, Lyon, France, 31/05/2013
- 6.18 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Beam-Plasma Instabilities.  
Massachusetts Institute of Technology, Cambridge, USA, 19/07/2012
- 6.19 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Beam-Plasma Instabilities.  
Laboratory for Laser Energetics, Rochester, USA, 06/06/2012
- 6.20 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Beam-Plasma Instabilities.  
The University of Wisconsin, Madison, USA, 26/04/2012
- 6.21 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Beam-Plasma Instabilities.  
The University of Kansas, USA, 05/04/2012
- 6.22 Gamma-Ray-Bursts, High-Energy-Cosmic-Rays and Beam-Plasma Instabilities.  
Princeton University, USA, 02/03/2012
- 6.23 Gamma-ray-bursts, high-energy-cosmic-rays and beam-plasma instabilities.  
Instituto de Astrofísica de Andalucía, Granada, Spain, 06/10/2011
- 6.24 Gamma-ray-bursts, high-energy-cosmic-rays and beam-plasma instabilities.  
Institut de Ciències de l'Espai, Barcelona, Spain, 18/05/2011
- 6.25 Streaming Instabilities in the Relativistic Regime: Role in Inertial Fusion and Astrophysics.  
Bochum University, Germany, 02/02/2010
- 6.26 Streaming instabilities in the relativistic regime.  
Dublin Institute for Advanced Studies, Ireland, 21/07/2009

## Antoine BRET - Publications and Talks

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- 6.27 Beam Plasma Instabilities in the Relativistic Regime.  
Universidad Rey Juan Carlos, Madrid, Spain, 20/05/2009
- 6.28 Electromagnetic instabilities in relativistic beam-plasma interactions.  
Inst Super Tecnico, Grupo de Laser e Plasma, Lisbon, Portugal, 02/06/2008
- 6.29 Instabilités faisceaux plasma dans le régime relativiste. Progrès récents et rôle en fusion inertielle.  
Université Paris VI, France, 09/03/2007
- 6.30 Instabilités faisceaux plasma dans le régime relativiste. Progrès récents et rôle en fusion inertielle.  
LULI, France, 05/12/2006
- 6.31 Instabilités faisceaux plasma dans le régime relativiste. Progrès récents et rôle en fusion inertielle.  
LPMIA, Nancy, 04/12/2006
- 6.32 About the not so well-known most unstable modes encountered in relativistic beam-plasma interaction.  
GSI Darmstad, Germany, 25/10/2005
- 6.33 Au-delà de l'instabilité double faisceau: Instabilités électromagnétiques dans tout l'espace  $k$  pour  $u$   
LPGP, Orsay, France, 23/09/2005
- 6.34 Electromagnetic instabilities in all  $k$  space for beam-plasma interaction.  
CELIA, Bordeaux, France, 18/05/2004

## 7. Outreach

- 7.1 L'homme est-il responsable du changement climatique ?.  
A Rocha Switzerland, Lausanna, Switzerland, 01/09/2018
- 7.2 Elements of climate science.  
European Regional Creation Care Conference, Nice, France, 12/09/2017
- 7.3 Cambio climático: Como sabemos que lo hay, y ¿porque?.  
Collegio Juan de Valdes, Madrid, Spain, 05/06/2017
- 7.4 El cambio climático en cinco preguntas.  
ARC-PEACE, Palma de Mallorca, Spain, 11/05/2017
- 7.5 El cambio climático en cinco preguntas.  
IES La Ribera, Palma de Mallorca, Spain, 11/05/2017
- 7.6 El cambio climático en cinco preguntas.  
Collegi Francesc de Borja Moll S'Arenal, Palma de Mallorca, Spain, 11/05/2017
- 7.7 Cambio climático: Como sabemos que lo hay, y ¿porque?.  
Collegio El Porvenir, Madrid, Spain, 16/03/2017
- 7.8 Peut-on croire à la science du climat ?.  
Une réponse chrétienne au changement climatique (A'Rocha - COP21), Paris, France, 01/12/2015
- 7.9 Peut-on "croire" à la science climatique ?.  
A'Rocha France, Domaine des Courmettes, France, 01/06/2015

## **Antoine BRET - Publications and Talks**

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- 7.10** Energy and Climate: a Global Perspective.  
Conservatoire National des Arts des Métiers, LIRSA, Paris, France, 01/05/2015
  
- 7.11** Energy and Climate: a Global Perspective.  
Strathclyde University, Glasgow, UK, 01/03/2015
  
- 7.12** Climat : un réchauffement inexorable ?.  
"Sciences Humaines" magazine, France, 01/11/2013
  
- 7.13** Energía y clima: una perspectiva global.  
Camprodon Town Hall, Spain, 01/08/2013
  
- 7.14** Energía y clima: una perspectiva global.  
Universidad Castilla-La Mancha - Summer School, ([www.youtube.com/watch?v=fxJj75Im\\_Gc](http://www.youtube.com/watch?v=fxJj75Im_Gc)), 01/
  
- 7.15** Fusion, Energy, Climate: A Broad Perspective.  
1st Technology in Inertial Fusion Workshop, Oporto, Portugal, 01/09/2010