



Gonzalo Sanchez Arriaga

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Gonzalo Sanchez Arriaga

Surname(s): Sanchez Arriaga
Name: Gonzalo
DNI: 75881940H
Date of birth: 08/04/1981
Gender: Male
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Current professional situation

Employing entity: Universidad Carlos III de Madrid **Type of entity:** University
Professional category: Visiting Professor (Postdoc) **Educational Management (Yes/No):** Yes
City employing entity: Leganes, Community of Madrid, Spain
Phone: 916248229 **Email:** gonsanch@ing.uc3m.es
Start date: 01/03/2015
Dedication regime: Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	Universidad Politécnica de Madrid	Profesor Ayudante Doctor	28/05/2012
2	Universidad Politécnica de Madrid	Investigador posdoctoral	15/10/2011
3	Commisariat a l'energie atomique	Investigador posdoctoral	01/10/2009
4	Universidad Politécnica de Madrid	Becario FPI	01/08/2005

- 1** **Employing entity:** Universidad Politécnica de Madrid **Type of entity:** University
Department: Fisica Aplicada, Universidad Politécnica de Madrid
City employing entity: Madrid, Spain
Professional category: Profesor Ayudante Doctor **Educational Management (Yes/No):** Yes
Start-End date: 28/05/2012 - 28/02/2015
Type of contract: Temporary employment contract
Dedication regime: Full time
- 2** **Employing entity:** Universidad Politécnica de Madrid **Type of entity:** University
City employing entity: Madrid, Community of Madrid, Spain
Professional category: Investigador posdoctoral **Educational Management (Yes/No):** No
Start date: 15/10/2011 **Duration:** 3 months



Type of contract: Temporary employment contract
Dedication regime: Part time

- 3** **Employing entity:** Commissariat a l'energie atomique **Type of entity:** State agency
City employing entity: Paris, Île de France, France
Professional category: Investigador posdoctoral **Educational Management (Yes/No):** No
Start date: 01/10/2009 **Duration:** 2 years
Type of contract: Temporary employment contract
Dedication regime: Full time
- 4** **Employing entity:** Universidad Politécnica de Madrid **Type of entity:** University
City employing entity: Madrid, Community of Madrid, Spain
Professional category: Becario FPI **Educational Management (Yes/No):** No
Start date: 01/08/2005 **Duration:** 4 years
Type of contract: Grant-assisted student (pre or post-doctoral, others)
Dedication regime: Full time



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

- 1 **University degree:** Higher degree
Name of qualification: Licenciado en Ciencias Físicas
City degree awarding entity: Madrid, Community of Madrid, Spain
Degree awarding entity: Universidad Complutense **Type of entity:** University de Madrid
Date of qualification: 06/2010
- 2 **University degree:** Higher degree
Name of qualification: Ingeniero Aeronáutico
City degree awarding entity: Madrid, Community of Madrid, Spain
Degree awarding entity: Universidad Politécnica de Madrid **Type of entity:** University Madrid
Date of qualification: 16/11/2004
Average mark: Good

Doctorates

Doctorate programme: Doctor
Degree awarding entity: Universidad Politécnica de Madrid **Type of entity:** University Madrid
City degree awarding entity: Madrid, Community of Madrid, Spain
Date of degree: 07/07/2009
DEA awarding entity: Universidad Politécnica de Madrid
Date DEA was awarded: 06/2006
European doctorate: Yes **Date of certificate:** 07/07/2009
Thesis title: Nonlinear low-frequency wavefront generated by electrodynamic tethers
Thesis director: Juan Sanmartín Losada
Obtained qualification: Sobresaliente cum Laude
Special doctorate award: Yes **Date of award:** 28/07/2010

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1 **Type of training:** Course
Training title: II Curso de Comercialización de Tecnologías UPM Innovatech
City awarding entity: Madrid, Community of Madrid, Spain
Awarding entity: Universidad Politécnica de Madrid **Type of entity:** University
Training manager: CAIT
End date: 29/10/2013 **Duration in hours:** 44 hours



- 2** **Type of training:** Course
Training title: Digital Signal Processing
City awarding entity: Madrid, Community of Madrid, Spain
Awarding entity: Universidad Politécnica de Madrid **Type of entity:** University
Training manager: Prof. Gelman
Duration in hours: 24 hours

Language skills

Language	Speaking	Reading	Writing
German	Elementary	Elementary	Elementary
French	Elementary	Elementary	Elementary
English	Advanced	Advanced	Advanced

Teaching experience

General teaching experience

- 1** **Type of teaching:** Official teaching
Name of the course: Mecanica Analitica
Type of programme: Others **Type of teaching:** In person theory
Type of subject: Optional
University degree: Grado en Ingenieria Aeroespacial
Type of hours/ ECTS credits: Credits
Hours/ECTS credits: 3
Entity: Universidad Politécnica de Madrid **Type of entity:** University
Department: Aerotecnia
- 2** **Type of teaching:** Official teaching
Name of the course: Física II
Type of programme: Engineering **Type of teaching:** Laboratory work
Type of subject: Core
University degree: Ingeniero Aeronáutico
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 120
Entity: Universida Politécnica de Madrid **Type of entity:** University
Department: Departamento de Física Aplicada a la Ingeniería Aeronáutica
- 3** **Type of teaching:** Official teaching
Name of the course: Fisica I
Type of programme: Others **Type of teaching:** In person theory
Type of subject: Others
University degree: Grado en Ingenieria Aeroespacial
Course given: 2012-15
Type of hours/ ECTS credits: Credits
Hours/ECTS credits: 6

**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Department:** Física y Química Aplicadas a la Técnica Aeronáutica**4 Type of teaching:** Official teaching**Name of the course:** Física II**Type of programme:** Others**Type of teaching:** In person theory**Type of subject:** Others**University degree:** Grado en Ingeniería Aeroespacial**Course given:** 2012-14**Type of hours/ ECTS credits:** Credits**Hours/ECTS credits:** 6**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Department:** Física y Química Aplicadas a la Técnica Aeronáutica**Experience supervising doctoral thesis and/or final year projects****1 Project title:** Bare-tape scaling laws for de-orbit missions in a space debris environment**Type of project:** Doctoral thesis**Co-director of thesis:** Juan Sanmartín Losada**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Student:** Shaker Bayajid Khan**Obtained qualification:** Sobresaliente**Date of reading:** 07/10/2014**2 Project title:** Preliminary mission design of payload adapters deorbiting using electrodynamic tethers**Type of project:** Minor thesis**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Student:** Mikhail Bezdenjnykh Vasenin**Obtained qualification:** 8**Date of reading:** 25/09/2014**3 Project title:** Dinámica y Control de Cometas con bridas de geometría variable**Type of project:** End of course project**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Student:** Jorge Alonso Pardo**Obtained qualification:** 10**Date of reading:** 13/03/2014**4 Project title:** Dinámica y control de cometas de una línea**Type of project:** End of course project**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Student:** Luis Salord Losantos**Obtained qualification:** 10**Date of reading:** 11/10/2013**5 Project title:** Bare-Tether Cathodic Contact through Thermionic Emission by Low-W Materials**Type of project:** Doctoral thesis**Co-director of thesis:** Juan Sanmartín Losada**Entity:** Universidad Politécnica de Madrid**Type of entity:** University**Student:** X. Chen



Student tutorials

- 1 Name of the programme:** Doctorate
Entity: Universidad Politécnica de Madrid
City of entity: Pisa, Italy
Frequency of the activity: 1
Number of tutored students: 1
Type of entity: University
- 2 Name of the programme:** BETs project grant
Entity: Universidad Politécnica de Madrid
City of entity: Madrid, Spain
Frequency of the activity: 1
Number of tutored students: 1
Type of entity: University

Other activities/achievements not included above

Description of the activity: Preparation of the technical report of a fellowship grant for the student D. Lorenzon. The grant was given by the CONICET (Argentina) and the PhD thesis "Simulaciones numéricas de sondas de Langmuir cilíndricas con códigos de Vlasov directo" will start in 2015 (co-advorsed by S. Elaskar and G. Sánchez-Arriaga)
City of activity: Córdoba, Argentina
Organising entity: Universidad de Cordoba (Argentina)

Scientific and technological experience

Research and development groups/teams

Name of the group: Grupo de Investigación en Fusión Inercial y Física de Plasmas
Name of principal investigator: Fco. Javier Sanz Recio
City of group: Madrid, Community of Madrid, Spain
Affiliation entity: Universidad Politécnica de Madrid
Start date: 08/02/2007



Scientific or technological activities

R&D projects funded through competitive calls of public or private entities.

- 1** **Name of the project:** Análisis dinámico, propagación orbital avanzada y simulación de sistemas espaciales complejos
Entity where project took place: Universidad Politécnica de Madrid **Type of entity:** University
City of entity: Spain
Name principal investigator (PI, Co-PI....): Jesus Pelaez Alvarez
Nº of researchers: 16
Funding entity or bodies: Ministerio de Economía y Competitividad
Start date: 21/11/2014
Total amount: 145.200
- 2** **Name of the project:** Inestabilidades Hidrodinámicas en Fusión Termonuclear Controlada por Confinamiento Inercial
Entity where project took place: Universidad Politécnica de Madrid **Type of entity:** University
City of entity: Spain
Name principal investigator (PI, Co-PI....): Fco. Javier Sanz Recio
Nº of researchers: 8
Funding entity or bodies: Ministerio de Ciencia e Innovación (ENE2011-28489)
Code according to the funding entity: C11010501
Start date: 01/01/2012
- 3** **Name of the project:** BETs: Propellantless deorbiting of space debris by bare electrodynamic tether
Entity where project took place: Universidad Politécnica de Madrid **Type of entity:** University
City of entity: Unknown
Name principal investigator (PI, Co-PI....): Juan Ramon Sanmartin Losada
Nº of researchers: 7
Funding entity or bodies: Comisión Europea **Type of entity:** .
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: E100105908
Start date: 16/12/2010
- 4** **Name of the project:** Generation et Optimisation de Sources de Protons et ions Energetiques par Lasers ultra courts, ultra intenses et a tres haut contraste
Geographical area: National
Entity where project took place: Commissariat à l'énergie atomique
City of entity: France
Name principal investigator (PI, Co-PI....): T. Ceccotti
Nº of researchers: 7

**Funding entity or bodies:**

Agence Nationale de la Recherche

Code according to the funding entity: ANR-08-BLAN-0072-03**Start date:** 01/10/2009**Dedication regime:** Full time**5 Name of the project:** Amarras espaciales electrodinámicas**Geographical area:** National**Degree of contribution:** Researcher**Entity where project took place:** Universidad
Politécnica de Madrid**Type of entity:** University**City of entity:** Spain**Name principal investigator (PI, Co-PI....):** Juan Ramon Sanmartin Losada**Nº of researchers:** 4**Funding entity or bodies:**

MINISTERIO DE EDUCACION Y CIENCIA

City funding entity: Spain**Code according to the funding entity:** ESP2005- 01511**Start date:** 01/08/2005**Dedication regime:** Full time

Results

Industrial and intellectual property

1 Title registered industrial property: Kinetic Langmuir Probe Software (Kilaps)**Type of industrial property:** Registro de Software **Author's rights:** Yes**Inventors/authors/obtainers:** Gonzalo Sanchez Arriaga; D. Pastor Moreno**Entity holder of rights:** Universidad Politécnica de Madrid**Nº of application:** M-005370/2014**Country of inscription:** Spain**Date of register:** 26/12/2014**2 Title registered industrial property:** Bare Electrodynamic Tether Mission Analysis (BETsMA)**Type of industrial property:** Registro de Software **Author's rights:** Yes**Inventors/authors/obtainers:** Gonzalo Sanchez Arriaga; S Khan; A. Sanchez Torres; J. Williams; D. Blash;
F. Garcia Quirós; J. Carrasco; R. Rosta**Entity holder of rights:** Universidad Politécnica de Madrid**Nº of application:** M-005377/2014**Country of inscription:** Spain**Date of register:** 19/12/2014**Conferral date:** 19/12/2014



Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** G. Sanchez-Arriaga; C. Bombardelli; X. Chen. Impact of nonideal effects on bare electrodynamic tether performance. Journal of Propulsion and Power. 10.2514/1.B35393, pp. 1 - 5. 20/01/2015.
Type of production: Article **Format:** Journal
- 2** G. Sánchez-Arriaga; E. Siminos; V. Saxena; I. Kourakis. Relativistic breather-type solitary waves with linear polarization in cold plasmas. Physical Review E. 91 - 033102, 2015.
Type of production: Article **Format:** Journal
- 3** Gonzalo Sanchez Arriaga; D. Pastor-Moreno. Direct Vlasov simulations of electron-attracting cylindrical Langmuir probes in flowing plasmas. Physics of Plasmas. 21 - null, pp. 073504-1 - 073504-8. 01/2014. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,376
- 4** M. Sanjurjo-Rivo; Gonzalo Sanchez Arriaga; Jesus Pelaez Alvarez. Efficient Computation of Current Collection in Bare Electrodynamic Tethers in and beyond OML regime. Journal of Aerospace Engineering. pp. 04014144-1 - 04014144-9. 01/2014. ISSN 0893-1321
Type of production: Article
Position of signature: 2
Impact index in year of publication: 0,778
- 5** L. Salord; Gonzalo Sanchez Arriaga. Flight dynamics and stability of kites in steady and unsteady wind conditions. Journal of Aircraft. pp. 1 - 7. 01/2014. ISSN 0021-8669
Type of production: Article
Position of signature: 2
Impact index in year of publication: 0,632
- 6** Gonzalo Sanchez Arriaga; Claudio Bombardelli; X. Chen. Impact of non ideal effects on bare electrodynamic tether performance. Journal of Spacecraft And Rockets. 01/2014. ISSN 0022-4650
Type of production: Article
Position of signature: 1
Impact index in year of publication: 0,489
- 7** A. Lifschitz; F. Sylla; S. Kahaly; A. Flacco; M. Veltcheva; Gonzalo Sanchez Arriaga; E. Lefebvre; V. Malka. Ion acceleration in underdense plasmas by ultra-short laser pulses. New Journal of Physics. pp. 1 - 10. 01/2014. ISSN 1367-2630
Type of production: Article
Position of signature: 6
Impact index in year of publication: 4,063



- 8** E. Siminos; Gonzalo Sanchez Arriaga; V. Saxena; I. Kourakis. Modelling relativistic solitary wave interactions in over-dense plasmas: a perturbed nonlinear Schrödinger equation framework. *Physical Review e*. 90 - null, pp. 063104-1 - 063104-15. 01/2014. ISSN 1539-3755
Type of production: Article
Position of signature: 2
Impact index in year of publication: 2,313
- 9** Gonzalo Sanchez Arriaga; Fco. Javier Sanz Recio; A. Debayle; G. Lehmann. The behavior of the electron plasma boundary in ultraintense laser-highly overdense plasma interaction. *Physics of Plasmas*. pp. 123107-1 - 123107-10. 01/2014. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,376
- 10** Gonzalo Sanchez Arriaga. BETsMA Manual. 2014. Available online at: <http://www.thebetsproject.com/resources>.
Type of production: Software Manual **Format:** Scientific and technical document or report
- 11** Gonzalo Sanchez Arriaga. A direct Vlasov code to study the non-stationary current collection by a cylindrical Langmuir probe. *Physics of Plasmas*. pp. 013504-1 - 013504-8. 01/2013. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,147
- 12** Vikrant Saxena; Ioannis Kourakis; Gonzalo Sanchez Arriaga; Evangelos Siminos. Interaction of spatially overlapping standing electromagnetic solitons in plasmas. *Physics Letters a*. pp. 473 - 477. 01/2013. ISSN 0375-9601
Type of production: Article
Position of signature: 3
Impact index in year of publication: 1,632
- 13** Gonzalo Sanchez Arriaga. Structure of intermediate shocks in collisionless anisotropic Hall-magnetohydrodynamics plasma models. *Physics of Plasmas*. pp. 102102 - 102102. 01/2013. ISSN 1070-664X
Type of production: Article
Position of signature: 1
- 14** Juan Ramon Sanmartin Losada; Gonzalo Sanchez Arriaga. Seguridad Espacial: Una solución práctica para el problema de los residuos espaciales en órbita. III Seminario sobre actividades espaciales y derecho. 69-82, 2013. ISBN 978-84-616-7392-6
Type of production: Chapters of books
Position of signature: 2
- 15** Francois Sylla; A. Flacco; S. Kahaly; M. Veltcheva; A. Lifschitz; Gonzalo Sanchez Arriaga; E. Lefebvre; V. Malka. Anticorrelation between Ion Acceleration and Nonlinear Coherent Structures from Laser-Underdense Plasma Interaction. *Physical Review Letters*. 108 - null, pp. 115003 - 5. 01/2012. ISSN 0031-9007
Type of production: Article
Position of signature: 6
Impact index in year of publication: 7,621



- 16** Gonzalo Sanchez Arriaga; Juan Ramon Sanmartin Losada. Relativistic current collection by a cylindrical Langmuir probe. *Physics of Plasmas*. pp. 063506 - 8. 01/2012. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,32
- 17** Gonzalo Sanchez Arriaga; Evangelos Siminos; Erik Lefebvre. Relativistic solitary waves modulating long laser pulses in plasmas. *Plasma Physics And Controlled Fusion*. 53 - null, pp. 45011 - 45029. 01/2011. ISSN 0741-3335
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,466
- 18** Gonzalo Sanchez Arriaga; Evangelos Siminos; Erik Lefebvre. Relativistic solitary waves with phase modulation embedded in long laser pulses in plasmas. *Physics of Plasmas*. 18 - null, pp. 082304 - 10. 01/2011. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,32
- 19** Dimitri Laveder; Thierry Passot; Pierre-Louis Sulem; Gonzalo Sanchez Arriaga. Rogue Waves in Alfvénic turbulence. *Physics Letters a*. pp. 997 - 1002. 01/2011. ISSN 0375-9601
Type of production: Article
Position of signature: 4
Impact index in year of publication: 1,963
- 20** Gonzalo Sanchez Arriaga; Erik Lefebvre. Two-dimensional s.polarized solitary waves in relativistic plasmas I. The fluid plasma model. *Physical Review e*. 84 - null, pp. 036403 - 8. 01/2011. ISSN 1539-3755
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,352
- 21** Gonzalo Sanchez Arriaga; Erik Lefebvre. Two-dimensional s.polarized solitary waves in relativistic plasmas II. Stability, collisions, electromagnetic bursts and post-soliton evolution. *Physical Review e*. 84 - null, pp. 036404 - 8. 01/2011. ISSN 1539-3755
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,352
- 22** Gonzalo Sanchez Arriaga. ALFVEN SOLITON AND MULTISOLITON DYNAMICS PERTURBED BY NONLINEAR LANDAU DAMPING. *Physics of Plasmas*. 17 - null, pp. 082313 - 10. 01/2010. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,32
- 23** Gonzalo Sanchez Arriaga; Juan Ramon Sanmartin Losada. FAST MAGNETOSONIC WAVE EXCITATION BY AN ARRAY OF WIRES WITH TIME-MODULATED CURRENTS. *Annales Geophysicae*. 28 - null, pp. 577 - 586. 01/2010. ISSN 0992-7689
Type of production: Article



Position of signature: 1

Impact index in year of publication: 1,62

- 24** Gonzalo Sanchez Arriaga; Juan Ramon Sanmartin Losada. MAGNETIC PUMPING OF WHISTLER WAVES BY TETHER CURRENT MODULATION. Journal of Geophysical Research. 115 - null, pp. A0231 - 9. 01/2010. ISSN 0148-0227
Type of production: Article
Position of signature: 1
Impact index in year of publication: 3,303
- 25** Gonzalo Sanchez Arriaga; Dimitri Laveder; Thierry Passot; Pierre-Louis Sulem. QUASICOLLAPSE OF OBLIQUE SOLITONS OF THE WEAKLY DISSIPATIVE DERIVATIVE NONLINEAR SCHRODINGER EQUATION. Physical Review e. 82 - null, pp. 016406 - 14. 01/2010. ISSN 1539-3755
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,352
- 26** Gonzalo Sanchez Arriaga; Tohru Hada; Yasuhiro Nariyuki. THE TRUNCATION MODEL OF THE DERIVATIVE NONLINEAR SCHRODINGER EQUATION. Physics of Plasmas. 16 - null, pp. 042302 - 8. 01/2009. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,475
- 27** Gonzalo Sanchez Arriaga; Tohru Hada; Yasuhiro Nariyuki. TRUNCATION MODEL IN THE TRIPLE-DEGENERATE DERIVATIVE NONLINEAR SCHRODINGER EQUATION. Physics of Plasmas. 16 - null, pp. 042303 - 9. 01/2009. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,475
- 28** Gonzalo Sanchez Arriaga; Juan Ramon Sanmartin Losada; Sergio Elaskar. DAMPING MODELS IN THE DERIVATIVE NONLINEAR SCHRODINGER EQUATION. Physics of Plasmas. 14 - null, pp. 082108 - 9. 01/2007. ISSN 1070-664X
Type of production: Article
Position of signature: 1
Impact index in year of publication: 2,325
- 29** Gonzalo Sanchez Arriaga. Dynamics and control of single-line kites. The Aeronautical Journal. 110 - null, pp. 615 - 621. 01/2006. ISSN 0001-9240
Type of production: Article
Position of signature: 1
Impact index in year of publication: 0,267
- 30** J. Alonso; G. Sánchez-Arriaga. A kite model with bridle control for wind power generation. Journal of Aircraft (Accepted).
Type of production: Article



- 31** J. Sanmartín; A. Sánchez-Torres; B. Khan; G. Sánchez-Arriaga; M. Charro. Optimum sizing of bare-tape tethers for de-orbiting satellites at end of mission. *Advances in Space Research* (Submitted).

Type of production: Article

Works submitted to national or international conferences

- 1** **Title of the work:** Life Deorbiting Services for Microsatellites Making Use of Bare Electrodynamic Tethers
Name of the conference: Small Satellite Systems and Services Symposium,
Type of participation: Poster
Date of event: 26/05/2014
Organising entity: European Space Agency
City organizing entity: Palma de Mallorca,
R. Mantellato; A. Valmorbida; M. Pertile; A. Francesconi; E. Lorenzini; Gonzalo Sanchez Arriaga.
- 2** **Title of the work:** Seguridad Espacial: una solución práctica para el problema de los residuos espaciales en órbita
Name of the conference: III Seminario sobre Actividades Espaciales y Derecho
Type of participation: Invited speaker
City of event: Madrid, Spain
Date of event: 19/11/2013
End date: 21/11/2013
Organising entity: Instituto Iberoamericano de Derecho Aeronáutico y del Espacio de la Aviación Comercial
J. Sanmartín Losada; G. Sanchez Arriaga.
- 3** **Title of the work:** Direct Vlasov simulations of non-stationary cylindrical Langmuir probe in flowing plasmas
Name of the conference: 10th International Workshop on Electric Probes in Magnetized Plasmas (IWEP 2013)
Type of participation: Speaker
Date of event: 09/07/2013
Organising entity: Universidad Politécnica de Madrid
Type of entity: University
City organizing entity: Madrid, España,
D. Pastor Moreno; Gonzalo Sanchez Arriaga. "Book of Abstracts of the 10-th International Workshop on Electric Probes in Magnetized Plasmas IWEP 2013, Editorial Universidad Politécnica de Madrid". pp. 38 - 38.
- 4** **Title of the work:** Structural stability analysis of the ultra-intense laser/plasma interaction: explaining multiple results for the same simulations and experiments
Name of the conference: 40th EPS Conference on Plasma Physics
Type of participation: Poster
City of event: Helsinki,
Date of event: 01/07/2013
Organising entity: European Physical Society
City organizing entity: Helsinki,
Gonzalo Sanchez Arriaga; A. Debayle; Fco. Javier Sanz Recio.
- 5** **Title of the work:** Tape-tether design for the de-orbiting from given altitude and inclination
Name of the conference: 6th European Conference on Space Debris
Type of event: Conference
Type of participation: Poster
Date of event: 22/04/2013

Organising entity: European Space Agency

City organizing entity: Darmstadt,

Juan Ramon Sanmartin Losada; Antonio Sánchez Torres; Shaker Bayajid Khan .; Gonzalo Sanchez Arriaga; Mario Charro Cubero. "Proceedings of 6th European Conference on Space Debris". pp. 1 - 5.

6 Title of the work: Eliminación de basura espacial

Name of the conference: European Space Expo

Type of event: ESE

Type of participation: Invited speaker

City of event: Madrid, Spain

Date of event: 12/02/2013

End date: 18/02/2013

Organising entity: Comisión Europea

Type of entity: 0

Gonzalo Sanchez Arriaga.

7 Title of the work: Propellantless deorbiting of space debris by bare electrodynamic tethers

Name of the conference: 2nd FP7 Space Conference

Type of participation: Invited speaker

Date of event: 15/11/2012

Organising entity: Comisión Europea

Type of entity: .

City organizing entity: Larnaca, Chipre,

Juan Ramon Sanmartin Losada; Gonzalo Sanchez Arriaga; E. Lorenzini; D. Zanutto; J. F. Roussel; P. Sarrailh; J. D. Williams; K. Xie; F. Garcia de Quiros; J. Carrasco; T. van Zoest; R. Rosta; J. Lasa; J. Marcos.

8 Title of the work: A corrected tether-mission to Jupiter

Name of the conference: European Planetary Science Congress 2012

Type of participation: Poster

Date of event: 23/09/2012

Organising entity: European Research Infrastructure for Planetary Science

Gonzalo Sanchez Arriaga; Mario Charro Cubero; Juan Ramon Sanmartin Losada.

9 Title of the work: BETs progress in state-of-the-art tether technology

Name of the conference: CleanSpace Workshop (ESA/ESOC)

Type of participation: Speaker

Date of event: 17/09/2012

Organising entity: European Space Agency

City organizing entity: Darmstadt,

Juan Ramon Sanmartin Losada; Gonzalo Sanchez Arriaga; E. Lorenzini; et. al.

10 Title of the work: Dynamics of Alfvén solitons perturbed by nonlinear Landau damping

Name of the conference: 2th Conference on Localized Excitations in Nonlinear Complex Systems

Type of participation: Poster

Date of event: 09/07/2012

Organising entity: Universidad de Sevilla

Type of entity: University

City organizing entity: Sevilla,

Gonzalo Sanchez Arriaga.

11 Title of the work: Dynamic of two-dimensional s-polarized relativistic solitary waves in plasmas

Name of the conference: Exchange on Laser-Plasma Interaction Theory

Type of participation: Speaker

Date of event: 16/04/2012



Organising entity: Max-Planck Institute
City organizing entity: Dresden,
Gonzalo Sanchez Arriaga; E. Lefebvre.

- 12** **Title of the work:** Dynamic of subcycle linearly polarized relativistic solitary waves in plasmas
Name of the conference: Congres General de la Societe Francaise de Physique
Type of participation: Speaker
Date of event: 04/07/2011
Organising entity: Societe Francaise de Physique
City organizing entity: Burdeos,
Gonzalo Sanchez Arriaga; E. Lefebvre.
- 13** **Title of the work:** Dynamic of subcycle linearly polarized relativistic solitary waves in plasmas
Name of the conference: 38th EPS Plasmas Strasbourg 2011
Type of participation: Poster
Date of event: 27/06/2011
Organising entity: European Physical Society
City organizing entity: Estrasburgo,
Gonzalo Sanchez Arriaga; E. Lefebvre.
- 14** **Title of the work:** Observation of spectral modulation in laser ion acceleration from underdense plasmas
Name of the conference: 52nd Annual meeting of the APS Division of Plasma Physics
Type of participation: Speaker
Date of event: 08/11/2010
Organising entity: American Physical Society
A. Flacco; F. Sylla; S. Kahaly; M. Veltcheva; Gonzalo Sanchez Arriaga; E. Lefebvre; V. Malka.
- 15** **Title of the work:** In-orbit experiment on parametric pumping low frequency waves by tether-current modulation
Name of the conference: 37th Committee on Space Research (COSPAR) Scientific Assembly
Type of participation: Speaker
Date of event: 13/07/2008
Organising entity: Committee on Space Research
Gonzalo Sanchez Arriaga; Juan Ramon Sanmartin Losada.
- 16** **Title of the work:** Chaos in nonlinear Alfvén waves using the DNLS equation
Name of the conference: International Symposium on Electrodynamics
Date of event: 04/11/2006
End date: 06/11/2006
S Elaskar; G. Sanchez Arriaga; J. Sanmartín Losada.
- 17** **Title of the work:** Kite Flight Simulator
Name of the conference: AIAA Pegasus Student Conference
Type of participation: Speaker
City of event: Toulouse,
Date of event: 2005
Organising entity: AIAA
Gonzalo Sanchez Arriaga.



Works submitted to national or international seminars, workshops and/or courses

Title of the work: Relativistic solitary waves in laser-plasma interaction

Name of the event: Seminar of the Departement de Physique Theorique et Appliquée

Type of event: Course

City of event: Paris, France

Date of event: 29/07/2011

Organising entity: CEA

Gonzalo Sanchez Arriaga.

Type of entity: Public Research Body

Other dissemination activities

1 Title of the work: BETsMA: soluciones para 6000 toneladas de basura espacial

Name of the event: Newsletter

Type of event: Articulo

City of event: Madrid,

Date of event: 2014

Organising entity: CAIT (UPM)

G. Sanchez Arriaga.

2 Title of the work: El Problema de la Basura Espacial

Name of the event: Hablando con Científicos

Type of event: Media interviews

City of event: Madrid,

Date of event: 2014

Organising entity: Cienciaes.com

Gonzalo Sanchez Arriaga.

3 Title of the work: El problema de la Basura Espacial

Name of the event: Artículo para revista

Type of event: Media interviews

City of event: Madrid,

Date of event: 2014

Organising entity: Revista Muy Interesante

G. Sánchez Arriaga.



R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

Committee title: Jury Memeber of the Symposium Design and Syntgesis Exercise
Affiliation entity: Delst University of Technology
City affiliation entity: Delft, Holland
Start-End date: 05/07/2012 - 05/07/2012

Organization of R&D activities

- 1 Title of the activity:** BETs Final Meeting
Geographical area: European Union
Convening entity: Universidad Politécnica de Madrid **Type of entity:** University
City convening entity: Madrid,
Type of participation: Organiser
Nº assistants: 20
Start-End date: 22/01/2014 - 23/01/2014 **Duration:** 2 days
- 2 Title of the activity:** Fusión nuclear por laser: una energía limpia para el futuro
Type of activity: XIV Semana de la Ciencia de Madrid **Geographical area:** National
Convening entity: Universidad Politécnica de Madrid **Type of entity:** University
City convening entity: Madrid,
Type of participation: Organiser
Nº assistants: 200
Start date: 06/11/2014 **Duration:** 2 days
- 3 Title of the activity:** El problema de la Basura Espacial y sus Soluciones
Type of activity: XIV Semana de la Ciencia de Madrid **Geographical area:** National
Convening entity: Universidad Politécnica de Madrid **Type of entity:** University
City convening entity: Madrid,
Type of participation: Organiser
Nº assistants: 200
Start date: 03/11/2014 **Duration:** 3 days
- 4 Title of the activity:** Amarras Conductoras Espaciales para deorbitas satélites al finalizar la misión
Type of activity: XIII Semana de la Ciencia de Madrid **Geographical area:** National
Convening entity: Universidad Politécnica de Madrid **Type of entity:** University
City convening entity: Madrid,
Type of participation: Organiser
Nº assistants: 200
Start date: 04/11/2013 **Duration:** 3 days



- 5** **Title of the activity:** Amarras Conductoras Espaciales para deorbitas satélites al finalizar la misión
Type of activity: XII Semana de la Ciencia de Madrid **Geographical area:** National
Convening entity: Universidad Politécnica de Madrid **Type of entity:** University
City convening entity: Madrid,
Type of participation: Organiser
Nº assistants: 200
Start date: 05/11/2012 **Duration:** 3 days

R&D management

- Name of the activity:** Propellantless de orbiting of space debris by bare electrodynamic tethers (FP7/Space project)
Type of management: Management of R&D&I actions and projects
Performed tasks: Collaboration with the head of the project on the daily communication with the partners, some decision-making processes and the organization of projects meeting. Responsible of the development of two software, one of them involving the coordinated work of the seven partners of the project
Entity: Universidad Politecnica de Madrid
Start date: 28/05/2012 **Duration:** 2 years

Evaluation and revision of R&D projects and articles

- Name of the activity:** Referee
Performed tasks: Referee of the ISI Journals: Physics of Plasmas, Physica D, Journal of Guidance, Control, and Dynamics, Earth, Planets and Space, The Aeronautical Journal, IEEE Transactions on Plasma Science

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Observatoire de la Côte d'Azur]
City of entity: Nice, France
Start-End date: 25/06/2008 - 05/10/2008 **Duration:** 102 days
Goals of the stay: Doctorate
Provable tasks: DNLS soliton behavior perturbed by non-linear Landau damping
- 2** **Entity:** Kyushu University
City of entity: Fukuoka, Japan
Start-End date: 27/03/2007 - 25/07/2007 **Duration:** 122 days
Goals of the stay: Doctorate
Provable tasks: Truncation model in the DNLS and the triple-degenerate DNLS equation
- 3** **Entity:** Max-Planck Institute
City of entity: Dresden, Germany
Start date: 14/01/2014 **Duration:** 4 days
Goals of the stay: Guest
Provable tasks: Solitary waves interaction in relativistic plasmas



- 4** **Entity:** Observatoire de la Côte d'Azur]
City of entity: Nice,
Start date: 14/01/2013 **Duration:** 3 days
Goals of the stay: Guest
Provable tasks: Shocks and soliton in hall-magnetohydrodynamic plasma models

Obtained grants and scholarships

- 1** **Name of the grant:** Contrato
City awarding entity:
Aims: Post-doctoral
Awarding entity: CEA **Type of entity:** Public Research Body
Amount of the grant: 67,2
Conferral date: 01/10/2009
- 2** **Name of the grant:** Beca FPI
City awarding entity:
Aims: Pre-doctoral
Awarding entity: Ministerio de Educación y Ciencia **Type of entity:** Body, others
Amount of the grant: 52,8
Conferral date: 29/07/2005

Scientific societies and professional associations

Name of the society: Real Sociedad Española de Física
Start date: 2013

Prizes, mentions and distinctions

- 1** **Description:** The technological project BETsMA was recognized due to its innovative character by CAIT-UPM during the I Workshop International UPM Innovatech
Awarding entity: CAIT
City awarding entity: Madrid
Conferral date: 04/12/2013
- 2** **Description:** Premio Extraordinario de Doctorado de la UPM
Awarding entity: Universidad Politécnica de Madrid **Type of entity:** University
City awarding entity: UPM
Conferral date: 28/07/2010
- 3** **Description:** The end of the course project "Simulador de Vuelo de Cometas" was selected for the AIAA Student Pegasus Congerence
Awarding entity: Escuela Tecnica Superior de Ingenieroes Aeronáuticos
City awarding entity: Madrid, Spain
Conferral date: 2005



Obtained accreditations/recognitions

- 1** **Description:** Acreditado como Profesor Contratado Doctor
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia de la Calidad y Acreditación
Date of recognition: 12/03/2013
- 2** **Description:** Acreditado como Profesor Ayudante Doctor
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia de la Calidad y Acreditación
Date of recognition: 12/02/2011