



Emilia Rodriguez-Solano Ribeiro

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

Extensive experience in tokamak plasma physics, both theory and experiment, within various international institutions. In the mid-80's to early 90's I worked on the interface between plasma physics and tokamak design.

My thesis was on neoclassical theory of plasma transport in stellarators, and particle orbits, applied to the design of the TJ-II stellarator (1986). In Texas (1987-1996) I turned to tokamaks. I developed an iron core model for plasma equilibrium reconstruction, and provided theoretical and computational support for the design of the tokamaks TEXT-Upgrade and USTX. This entailed computation of equilibria and MHD stability, computation of current and voltage requirements for power supplies, forces and torques on coils and feeds, insulation requirements to survive disruptions, etc... During that time I also worked with Richard Hazeltine on neoclassical theory, now applied to tokamaks, including a study of the effect of a separatrix on neoclassical transport, and effects of charge exchange with neutrals on plasma rotation.

I have served in the Science Subcommittee of FESAC, an advisory body to the Office of Fusion Energy Science in the USA.

While in Garching in 1997-1998 I worked on equilibrium and pedestal physics for ITER, and on neoclassical theory on the stellarator W7-AS. At that time I started studying criticality conditions in non-linear PDEs, such as the Grad-Shafranov equation. That worked eventually matured in 2004, when I proposed that equilibrium criticality is the mechanism for formation of transport barriers. Later in 2012 R. Hazeltine and I developed the theory further and proposed that the L-H transition is a magnetic phase transition. We still hope to prove this to be the case, providing the long-sought trigger mechanism for the L-H transition.

From 1999 I have most often worked at JET. Over the years I worked in various roles. In scientific management I have been Scientific Assistant to JET EFDA Leader, Diagnostics Officer of the JET Enhancements Department and Responsible Officer for JET1 Physics Programme. I have done experimental research at JET, especially on plasmas with high temperature pedestals. In the Carbon wall era, we showed that ELMs result in sudden toroidal current loss and destruction of the pre-ELM separatrix, followed by the formation of a new (smaller) separatrix, the so-called strike jumps. We also studied the Outer Mode, known to appear at JET in low recycling/low density conditions. We showed that the best model of the JET Outer Mode is a rotating current ribbon, located at the flat-top of the pedestal, analogous to a smoke ring. In slow L-H transitions at JET I have identified the M-mode, an intermediate state between L and H-modes. It is accompanied by an axisymmetric magnetic oscillation ($n=0$), and its frequency scales with plasma current over square root of density: like a poloidal Alfvén wave. There is no known theory for such an observation. I am now returning to theoretical and experimental studies of the L-H transition and small ELMs, and radiation of W in the pedestal. Publication list available in Google Scholar <http://scholar.google.com/citations?user=L5AqeXwAAAAJ>.

Note that the years in which my job is scientific management I publish very little, due to lack of time.

I am known abroad as Emilia R. Solano.



General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

I have 65 journal papers, almost all in high impact scientific journals of my field.

I am first author of 13 of them, so far only 1 is a PRL. Google scholar quotes my h-index as 20, my I10-index as 37, and it counts 1493 citations as of 12/01/2017. But Google mixes conference proceedings and refereed journal publications. Of the refereed journal publications in which I am first author I had 139 citations in April 2016. Of course, I don't count the thousands of citations to the team by-lines, JET EFDA collaborators and JET Contributors, of which I am a member.

Note that the years in which my job is scientific management I publish very little, due to lack of time.

More importantly, my research is well known in the field to be highly original, often challenging prevailing views.

He publicado 65 artículos, casi todos en revistas de alto impacto de mi campo.

Soy primer autor de 13 de ellos, por ahora sólo uno en PRL. Google scholar refleja mi índice h como 20, el I10 índice es 37, y en Enero de 2017 cuenta 1493 citas a mis artículos. De la publicaciones en las que soy primer autor contaba en Abril de 2016 con 139 citas. Por supuesto, no cuento los miles de citas asignadas debido a mi pertenencia a los equipos de JET y de DIII-D.

Los años en los que trabajo en gestión científica publico poco, debido a falta de tiempo.

Quizá un dato más relevante es que my investigación es bien conocida en el campo por ser muy original, y frecuentemente desafío las explicaciones convencionales.

**Emilia Rodriguez-Solano Ribeiro**

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 ScopusID: **7006833757**
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Current professional situation

Employing entity: Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas **Type of entity:** Public Research Body

Department: Laboratorio Nacional de Fusion

Professional category: Researcher

City employing entity: Madrid, Community of Madrid, Spain

Phone: (0034) 913466159

Email: emilia.solano@ciemat.es

Start date: 13/05/2005

Type of contract: Civil servant

Dedication regime: Full time

Primary (UNESCO code): 220809 - Plasma containment

Secondary (UNESCO code): 220721 - Thermonuclear fusion

Tertiary (UNESCO code): 220207 - Interaction of electromagnetic waves with matter

Performed tasks: I study plasma physics applied to magnetic confinement devices with applications to the generation of energy via nuclear fusion. For a few years (03/2013-10/2015) I worked in JET management, first (03/210-12/2014) within the JET EFDA CSU, and later (01/2014-10/2015) in the Eurofusion ITER Physics Department. The job entailed scientific management and coordination at JET. I was Data Validation co-chair, and responsible for integrating diagnostics with the research programme. At JET I have worked on equilibrium reconstruction, pedestal physics and ELMs. I predicted and demonstrated that strike points change suddenly at ELMs due to loss of plasma current. I studied the so-called Outer Mode and showed that it is a closed ribbon of current, along a resonant field line, and that it appears to be located at the pedestal flat-top. In L-H transition physics I identified the M-mode, an axisymmetric MHD oscillation that appears at the transition. Since 11/2015 I have returned to full-time research. I am now working on pedestal physics, particularly L-H transition studies, pedestal MHD, equilibrium reconstruction and the impact of Tungsten radiation on pedestal behaviour..

Identify key words: Physics - Plasma and fluid

Previous positions and activities

	Employing entity	Professional category	Start date
1	Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas	Researcher	02/1999
2	Max-Planck-Institut für PlasmaPhysik, Garching, G	Guest Researcher	05/1997
3	Fusion Research Center, Univ. of Texas at Austin, USA	Research Associate	11/1990
4	Fusion Research Center, Univ. of Texas at Austin, USA	Postdoctoral Fellow	05/1987
5	Junta de Energía Nuclear, Madrid, Spain	Graduate Student	10/1983
6	Fusion Energy Division, ORNL, Oack Ridge, TN, USA	Graduate Student	03/1985

1 **Employing entity:** Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas **Type of entity:** Public Research Body

Professional category: Researcher

Start-End date: 02/1999 - 07/2002

Performed tasks: Scientific Assistant to Associate Director of Heating and Operations Department, JET, seconded from CIEMAT. Continuing research in structural stability theory, in the background. Learning about JET results, assisting JET Director by organising international meetings, supporting divertor design for the Big-JET proposal, training as Session Leader. Later, I became Scientific Assistant to the JET EFDA Leader, within the JET CSU. EFDA implied a complete restructuring of fusion research in Europe, and in JET in particular. Within the CSU my job was largely to provide scientific input to inform management decisions, but I was often involved on organisational issues as well. Amongst other tasks, I worked with the JET Task Force Leaders to develop a long term physics programme, to guide proposals for the first JET Enhancement Programme in 2000. After the proposal was accepted, I co-ordinated the necessary physics studies needed for design specifications, until a project leader and a physics leader were hired to take the projects forward. The job was largely managerial. During my stays in the JET CSU I had virtually no time to work on my own research. This is evidenced by gaps in my publication record. Generally I chose not to appear as co-author of articles written by myself on behalf of the whole team and presented by J. Pamela (head of JET) (1999-2004).

2 **Employing entity:** Max-Planck-Institut für PlasmaPhysik, Garching, G

Professional category: Guest Researcher

Start-End date: 05/1997 - 10/1996

Performed tasks: Dual position: consultant for the Edge Physics Group of the ITER-Joint Central Team and Guest Scientist for the Max-Planck-Institut für PlasmaPhysik, both in Garching, Germany. In the ITER position, I studied edge H-mode physics (data analysis, data fitting protocols, literature search); organized a meeting of international experts in H-mode; adapted existing codes for equilibrium and MHD studies of ITER; begun to develop analytical theory for the LH transition. In my IPP job, in collaboration with M. Taguchi, I worked on generalizing results from DKES (a code that solves a simplified drift-kinetic equation, in full 3D geometry) to properly account for interspecies momentum exchange. Additionally, I did research in theoretical plasma physics, studying bifurcation theory and its application to explaining the L-H transition and other tokamak confinement regimes.

3 **Employing entity:** Fusion Research Center, Univ. of Texas at Austin, USA

Professional category: Research Associate

Start-End date: 11/1990 - 06/1996

Performed tasks: Continuing applied research as before, collaborating with TEXT experimentalists on plasma equilibrium analysis: adapted existing equilibrium codes (EFIT, SEP, PSICONT) to new computer environment (from VAX to IBM 6000, RISC System and Unix). Also with the experimental



group, working on position detection and its feedback control, searching for H-mode. Collaborated with L. Lao (GA) and Dennis O'Brien (JET) on their adaptation of EFIT to JET.

4 Employing entity: Fusion Research Center, Univ. of Texas at Austin, USA

Professional category: Postdoctoral Fellow

Start-End date: 05/1987 - 10/1990

Performed tasks: Research topics included equilibrium (modifying and running EFIT) and stability studies for the diverted tokamak TEXT-Upgrade, iron core effects on tokamak equilibrium and stability (with G. H. Neilson from ORNL and L.L. Lao, from GA), neoclassical effects of particle sources on transport (with R. D. Hazeltine, IFS), and studies on H-mode. Many smaller applied problems for the TEXT-Upgrade project are solved as they come, often in collaboration with P. H. Edmonds and A. J. Wootton

5 Employing entity: Junta de Energía Nuclear, Madrid, Spain

Professional category: Graduate Student

Start-End date: 10/1983 - 12/1986

Performed tasks: Development of transport code for the tokamak TJ-I at the Junta de Energía Nuclear, with J. Guasp

6 Employing entity: Fusion Energy Division, ORNL, Oack Ridge, TN, USA

Professional category: Graduate Student

Start-End date: 03/1985 - 03/1986

Performed tasks: Study of neoclassical transport in TJ-II (Spanish flexible heliac) in the Fusion Energy Division of the Oak Ridge National Laboratory, with J. Lyon and B. Carreras as local collaboration leaders. The work included orbit computation with J. A. Rome, numerical studies of the drift kinetic equation with S.P. Hirshman's code DKES, and analytical work in collaboration with K.C. Shaing.



Education

University education

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

- 1** **University degree:** Higher degree
Name of qualification: Masters Degree
Degree awarding entity: Universidad Complutense de Madrid **Type of entity:** University
Date of qualification: 05/1983

- 2** **University degree:** Higher degree
Name of qualification: Bachelor Degree
Degree awarding entity: UNIVERSIDAD COMPLUTENSE DE MADRID **Type of entity:** University
Date of qualification: 09/1982

Doctorates

Doctorate programme: Physics PhD
Degree awarding entity: Departamento de Fisica, Universidad Complutense de Madrid
Date of degree: 16/12/1986

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	A1	A1	A1	A1	A1
Spanish	A1	A1	A1	A1	A1
Portuguese	A1	A1	A2	A2	A2



Scientific and technological experience

Scientific or technological activities

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

- 1** **Name of the project:** EUROfusion / JET Work Package WPJET1
Identify key words: Controlled fusion
Identify key words: Controlled fusion
Type of project: Research and development, including transfer **Geographical area:** European Union
Degree of contribution: Scientific coordinator
Entity where project took place: JET **Type of entity:** Public Research Body
City of entity: Culham, United Kingdom
Name principal investigator (PI, Co-PI....): Xavier Litaudon
N° of researchers: 500
Type of participation: Co-ordinator
Name of the programme: EUROFusion
Code according to the funding entity: 633053
Start-End date: 2014 - 2018 **Duration:** 4 years
Total amount: 6.000.000 €
Relevant results: Research on plasma physics and control at JET
Applicant's contribution: Scientific Coordination of WPJET experiment "B15-03: Effect of W on pedestal-like Te in L-mode" at JET, Culham, UK. Participation in WPJET Tasks "T15-02: Pedestal Physics" and "T15-10: Improved equilibrium reconstruction"
- 2** **Name of the project:** Incidencia de las resonancias magnéticas en el transporte y la estabilidad de plasmas de fusión por confinamiento magnético
Identify key words: Mhd and other fluid dynamics
Type of project: Research and development, including transfer
Degree of contribution: Researcher
Entity where project took place: Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas **Type of entity:** Public Research Body
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Francisco Castejón Magaña; Daniel López Bruna; Emilia Rodríguez-Solano Ribeiro; Antonio López-Fraguas; Maria Antonia Ochando; Francisco Medina; Baojun Sun; Adriana Martín de Aguilera
N° of researchers: 7
Start-End date: 01/2015 - 12/2017 **Duration:** 3 years
Total amount: 59.000 €
Applicant's contribution: Investigación del posible origen magnético de la transición a modo H en el tokamak JET.
- 3** **Name of the project:** Data Analysis based on Automatic Learning and Intelligent Data Acquisition Systems: advanced models for the nuclear fusion environment, ENE2012-38970-C04-01
Identify key words: Mhd and other fluid dynamics
Identify key words: Mhd and other fluid dynamics; Controlled fusion



Type of project: Research and development, including transfer

Degree of contribution: Researcher

Entity where project took place: Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

City of entity: Madrid, Community of Madrid, Spain

Name principal investigator (PI, Co-PI....): Jesús Vega Sánchez; Raul Castro; Emilia Rodriguez-Solano Ribeiro

Nº of researchers: 10

Type of participation: Team member

Start-End date: 01/2013 - 12/2015

Total amount: 117.000 €

Applicant's contribution: Definition of research objective: automatic identification of MHD modes based on spectrograms of signals from fast Mirnov coils in the JET tomaka. Application to detection of Outer Modes, identified as current filaments located at the plasma pedestal, spinning toroidally with the plasma.

Geographical area: National

Type of entity: Public Research Body

4 Name of the project: JET Experiments

Identify key words: Controlled fusion

Identify key words: Controlled fusion

Degree of contribution: Scientific coordinator

Entity where project took place: JET

City of entity: Culham, United Kingdom

Type of participation: Principal investigator

Start-End date: 2011 - 2012

Applicant's contribution: Scientific Coordination of JET experiment "Ex-2.2.9: Comparison of ELM control techniques with kicks" , "Ex-3.2.3: Pedestal Stability" and "Bx-3.2.5: Investigation of M-mode", all at JET, Culham, UK. Participation in various other experiments, notably in "Ex-3.2.1: L-H power threshold studies: Be/W vs. C"

5 Name of the project: Study of Criticality in Tokamaks, ENE2005-06929

Identify key words: General theory; Phase transition

Entity where project took place: Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

City of entity: Madrid, Community of Madrid, Spain

Nº of researchers: 1

Funding entity or bodies:

Ministerio de Ciencia y Tecnología, PN I+D ENE2005-06929

Start-End date: 01/2005 - 12/2007

Total amount: 7.140 €

Type of entity: Public Research Body



Scientific and technological activities

Scientific production

H index: 20

Publications, scientific and technical documents

- 1 ER SOLANO; GH NEILSON; LL LAO. Equilibrium and Stability Studies for an Iron Core Tokamak with a Poloidal Divertor. Nuclear Fusion. 30 - 6, pp. 1107 - 1115. 1990.

Type of production: Scientific paper **Format:** Journal

Relevant results: Developed semi-analytical model of poloidal magnetic fields due to poloidal coils and iron core. Showed that the iron transformer in TEXT has strong impact on separatrix shape, radial and vertical external fields required to hold plasma in equilibrium, and strong de-stabilising effect on vertical position control.

Relevant publication: Yes
- 2 NC Hawkes; BC Stratton; T Tala; CD Challis; G Conway; R DeAngelis; C Giroud; J Hobirk; E Joffrin; P Lomas; P Lotte; J Mailloux; D Mazon; E Rachlew; S Reyes-Cortes; E Solano; KD Zastrow. Observation of zero current density in the core of JET discharges with lower hybrid heating and current drive. Physical Review Letters. 87 - 11, pp. art. no. - 115001. 08/2001.

Type of production: Scientific paper **Format:** Journal

Relevant publication: Yes
- 3 NC HAWKES; Y ANDREW; CD CHALLIS; et al. The formation and evolution of extreme shear reversal in JET and its influence on local thermal transport. PLASMA PHYSICS AND CONTROLLED FUSION. 44 - 7, pp. 1105 - 1125. 2002.

Type of production: Scientific paper **Format:** Journal

Relevant results: Observation of hollow current density profiles (current hole), shown to be physically possible solutions of plasma equilibrium, present in plasmas with a strong internal transport barrier.

Relevant publication: Yes
- 4 Emilia R. Solano. Criticality of the Grad-Shafranov equation: transport barriers and fragile equilibria. Plasma Phys. Control. Fusion. 46, pp. L7. 02/2004. Available on-line at: <<http://dx.doi.org/10.1088/0741-3335/46/3/L02>>. ISSN 0741-3335

Type of production: Scientific paper **Format:** Journal

Position of signature: 1

Total no. authors: 1

Relevant results: Treated Grad-Shafranov equation as non-linear PDE. Found a simple condition that characterises critical points, at which the number of solutions of the equation changes. The mathematical criticality condition can be interpreted as critical plasma magnetisation, the boundary between para and diamagnetic plasmas. Proposed that this is what leads to the formation of transport barriers.

Relevant publication: Yes
- 5 Emilia R. Solano; S. Jachmich; F. Villone; N. Hawkes; Y. Corre; B. Alper; A. Loarte; R.A. Pitts; K. Guenther; A. Korotkov; M. Stamp; P. Andrew; J. Conboy; T. Bolzonella; M. Kempenaars; A. Cenedese; E. Rachlew; JET EFDA contributors. ELMs and strike point movements. Nucl. Fusion. 48, pp. 065005. 04/2008. Available on-line at: <<http://dx.doi.org/10.1088/0029-5515/48/6/065005>>. ISSN 0029-5515

Type of production: Scientific paper

Format: Journal

Position of signature: 1

Total no. authors: 17

Relevant results: A detailed study of position changes of plasma strike points before and after edge localized modes (ELMs) in JET was carried out. A hypothesis being tested is that in an ELM previously closed edge field lines would open up, releasing plasma current and leading to the formation of a new, smaller separatrix. It was observed that after each ELM strike points have shifted a few centimetres towards the plasma centre (up in JET). In some cases a transient ($<100\mu\text{s}$), upwards large ($>10\text{cm}$) jump of strike positions was observed first. It was followed by an equally fast jump down to the shifted strike positions. Such behaviour has not been described in previous computational models of the ELM. Therefore two novel instability mechanisms are presented, which contribute to explain the changes in strike point position: an X-point instability, due to positive toroidal current density at the X-point, and a diamagnetic instability, due to negative inboard toroidal current density.

Relevant publication: Yes

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ER Solano; PJ Lomas; B Alper; GS Xu; Y Andrew; G Arnoux; A Boboc; L Barrera; P Belo; MNA Beurskens; M Brix; K Crombe; E de la Luna; S Devaux; T Eich; S Gerasimov; C Giroud; D Harting; D Howell; A Huber; G Kocsis; A Korotkov; A Lopez-Fraguas; MFF Nave; E Rachlew; F Rimini; S Saarelma; A Sirinelli; SD Pinches; H Thomsen; L Zabeo; D Zarzoso. Observation of Confined Current Ribbon in JET Plasmas. Physical Review Letters. 104 - 18, 2010. Available on-line at: http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:0

Type of production: Scientific paper

Format: Journal

Relevant results: New insight on pedestal stability: in JET, with low gas fuelling and low recycling conditions, an Outer Mode often appears, delaying ELMs. The outer mode had been assumed to be an ideal kink, unstable in the steep gradient region of the pedestal, which would eventually grow into an ELM. We have now found that the outer mode is a fairly stable current ribbon, lasting as much as 1.5 s, located at the top of the pedestal, where the pressure gradient is very low. There are tantalising similarities with the EHO observed in DIII-D. This could provide a new route to ELM-free operation.

Relevant publication: Yes

7

Emilia R. Solano; Richard D. Hazeltine. Magnetic phase transitions in plasmas and transport barriers. Nucl. Fusion. 02/10/2012. Available on-line at: <http://dx.doi.org/10.1088/0029-5515/52/11/114017>.

Type of production: Scientific paper

Format: Journal

Position of signature: 1

Total no. authors: 2

Relevant results: A model of magnetic phase transitions in plasmas is presented: plasma elements with pressure excess or defect are dia- or paramagnets and move radially under the influence of the background plasma magnetization. It is found that magnetic phase separation could be the underlying mechanism of L to H transitions and drive transport barrier formation. Magnetic phase separation and the associated pedestal build-up, as described here, can be explained by the well-known interchange mechanism, now reinterpreted as a magnetization interchange. The interchange mechanism can drive motion of plasma elements even when stable. A testable necessary criterion for the L to H transition is presented.

Relevant publication: Yes

8

Emilia R. Solano; Nicola Vianello; Ephrem Delabie; et al. Axisymmetric oscillations at L-H transitions in JET: M-mode. Nuclear Fusion. 57 - 2, pp. 022021. IOP Publishing, 2017.

Type of production: Scientific paper

Format: Journal

Corresponding author: Yes

9

E Lerche; M Goniche; P Jacquet; D Van Eester; V Bobkov; L Colas; C Giroud; I Monakhov; FJ Casson; F Rimini; others. Optimization of ICRH for core impurity control in JET-ILW. Nuclear Fusion. 56 - 3, pp. 036022 - 036022. IOP Publishing, 2016.

Type of production: Scientific paper

Format: Journal



- 10** Elena de la Luna; et al. Understanding the physics of ELM pacing via vertical kicks in JET in view of ITER. Nuclear Fusion. 56 - 2, pp. 026001. IOP Publishing, 2016.
Type of production: Scientific paper **Format:** Journal
- 11** S Pamela; T Eich; L Frassinetti; B Sieglin; S Saarelma; G Huijsmans; M Hoelzl; M Becoulet; F Orain; S Devaux; I Chapman; I Lupelli; E Solano; JET Contributors. Non-linear MHD simulations of ELMs in JET and quantitative comparisons to experiments. Plasma Phys. Control. Fusion. 11/2015.
Type of production: Scientific paper **Format:** Journal
- 12** Morten Lennholm; PS Beaumont; IS Carvalho; IT Chapman; R Felton; D Frigione; L Garzotti; A Goodyear; J Graves; D Grist; Emilia Solano. ELM frequency feedback control on JET. Nuclear Fusion. 55 - 6, pp. 063004 - 063004. IOP Publishing, 2015.
Type of production: Scientific paper **Format:** Journal
- 13** I Nunes; the JET Contributors. Plasma confinement at JET. Plasma Phys. Control. Fusion. 2015.
Type of production: Scientific paper **Format:** Journal
- 14** D Alegre; A Alonso; J Alonso; P Alvarez; A Baciero; D Baiao; JM Barcala; E Blanco; M Borchardt; J Botija; others. Transport, stability and plasma control studies in the TJ-II stellarator. Nuclear Fusion. 55 - 10, pp. 104014 - 104014. IOP Publishing, 2015.
Type of production: Scientific paper **Format:** Journal
- 15** N Fedorczak; P Monier-Garbet; T Pösterich; S Brezinsek; P Devynck; R Dumont; M Goniche; E Joffrin; E Lerche; B Lipschultz; others. Tungsten transport and sources control in JET ITER-like wall H-mode plasmas. Journal of nuclear materials. 463, pp. 85 - 90. North-Holland, 2015.
Type of production: Scientific paper **Format:** Journal
- 16** Elena de la Luna; IT Chapman; Fernanda Rimini; PJ Lomas; Gabriella Saibene; Florian Koechl; Roberta Sartori; Samuli Saarelma; R Albanese; Joanne Flanagan; Emilia R. Solano. Understanding the physics of ELM pacing via vertical kicks in JET in view of ITER. Nuclear Fusion. 56 - 2, pp. 026001 - 026001. IOP Publishing, 2015.
Type of production: Scientific paper **Format:** Journal
- 17** M.N.A. Beurskens; L. Frassinetti; C. Challis; C. Giroud; S. Saarelma; B. Alper; C. Angioni; P. Bilkova; C. Bourdelle; S. Brezinsek; P. Buratti; G. Calabro; T. Eich; J. Flanagan; E. Giovannozzi; M. Groth; J. Hobirk; E. Joffrin; M.J. Leyland; P. Lomas; E. De La Luna; M. Kempenaars; G. Maddison; C. Maggi; P. Mantica; M. Maslov; G. Matthews; M.-L. Mayoral; R. Neu; I. Nunes; T. Osborne; F. Rimini; R. Scannell; E.R. Solano; P.B. Snyder; I. Voitsekhover; P.D. Vries. Global and pedestal confinement in JET with a Be/W metallic wall. 2014. Available on-line at: <<http://www.scopus.com/inward/record.url?eid=2-s2.0-84893498367&partnerID=MN8TOARS>>.
Type of production: Scientific paper **Format:** Journal
- 18** C.F. Maggi; E. Delabie; T.M. Biewer; M. Groth; N.C. Hawkes; M. Lehnen; E. De La Luna; K. McCormick; C. Reux; F. Rimini; E.R. Solano; Y. Andrew; C. Bourdelle; V. Bobkov; M. Brix; G. Calabro; A. Czarnecka; J. Flanagan; E. Lerche; S. Marsen; I. Nunes; D. Van Eester; M.F. Stamp. L-H power threshold studies in JET with Be/W and C wall. Nuclear Fusion. 54, pp. 023007. 2014. Available on-line at: <<http://www.scopus.com/inward/record.url?eid=2-s2.0-84893512033&partnerID=MN8TOARS>>.
Type of production: Scientific paper **Format:** Journal
- 19** J. Sánchez; D. Alegre; A. Alonso; J. Alonso; P. Álvarez; J. Arévalo; E. Ascasibar; A. Baciero; D. Baião; E. Blanco; M. Borchardt; J. Botija; A. Bustos; E. De La Cal; I. Calvo; A. Cappa; D. Carralero; R. Carrasco; F. Castejón; R. Castro; G. Catalán; A.A. Chmyga; M. Chamorro; L. Eliseev; T. Estrada; F. Fernández; J.M. Fontdecaba; L. García; R. García-Gómez; P. García-Sánchez; S. Da Graça; J. Guasp; R. Hatzky; J. Hernández; J. Hernanz; J. Herranz; C. Hidalgo; J.A. Jiménez; A. Jiménez-Denche; I. Kirpichev; R. Kleiber; A.D. Komarov; A.S. Kozachok; L. Krupnik; F. Lapayese; M. Liniers; D. López-Bruna; A. López-Fraguas; J. López-Razola;

A. Martín; F. Martín-Díaz; F. Martín-Hernández; A.B. Martín-Rojo; J. Martínez-Fernández; K.J. McCarthy; F. Medina; M. Medrano; L. Melón; A.V. Melnikov; P. Méndez; B. Van Milligen; P. Monreal; M. Navarro; I.S. Nedzelskiy; M.A. Ochando; J. Olivares; E. Oyarzábal; J.L. De Pablos; L. Pacios; I. Pastor; M.A. Pedrosa; A. De La Peña; A. Pereira; A. Petrov; S. Petrov; A.B. Portas; E. Rincón; L. Ríos; C. Rodríguez; B. Rojo; J.A. Romero; A. Ros; M. Sánchez; E. Sánchez; E. Sánchez-Sarabia; K. Sarkisian; J.A. Sebastián; C. Silva; E.R. Solano; A. Soletto; B. Sun; F.L. Tabarés; D. Tafalla; M. Tereshchenko; A. Tolkachev; J. Vega; G. Velasco; J.L. Velasco; G. Wolfers; B. Zurro. Dynamics of flows and confinement in the TJ-II stellarator. 2013. Available on-line at: <<http://www.scopus.com/inward/record.url?eid=2-s2.0-84884876190&partnerID=MN8TOARS>>.

Type of production: Scientific paper

Format: Journal

- 20** M.P. Gryaznevich; Y.Q. Liu; T.C. Hender; D.F. Howell; M. Beurskens; I.T. Chapman; C.D. Challis; E. Joffrin; H.R. Koslowski; P. Buratti; E. Solano; JET-EFDA Contributors. Determination of plasma stability using resonant field amplification in JET. Nucl. Fusion. 07/2012.

Type of production: Scientific paper

Format: Journal

- 21** D. Zarzoso; M.N.A. Beurskens; L. Frassinetti; E. Joffrin; F.G. Rimini; E.R. Solano; JET EFDA contributors. ELM size analysis in JET hybrid plasmas. Nucl. Fusion. 10/2011.

Type of production: Scientific paper

Format: Journal

- 22** F.S. Zaitsev; D.P. Kostomarov; E.P. Suchkov; V.V. Drozdov; E.R. Solano; A. Murari; S. Matejck; N.C. Hawkes; JET-EFDA Contributors. Analyses of substantially different plasma current densities and safety factors reconstructed from magnetic diagnostics data. Nucl. Fusion. 09/2011.

Type of production: Scientific paper

Format: Journal

- 23** M.N.A. Beurskens; T.H. Osborne; P.A. Schneider; E. Wolfrum; L. Frassinetti; R. Groebner; P. Lomas; I. Nunes; S. Saarelma; R. Scannell; P.B. Snyder; D. Zarzoso; I. Balboa; B. Bray; M. Brix; J. Flanagan; C. Giroud; E. Giovannozzi; M. Kempenaars; A. Loarte; E. De La Luna; G. Maddison; C.F. Maggi; D. McDonald; R. Pasqualotto; G. Saibene; R. Sartori; E. Solano; M. Walsh; L. Zabeo. H-mode pedestal scaling in DIII-D, ASDEX upgrade, and JET. 2011. Available on-line at: <<http://www.scopus.com/inward/record.url?eid=2-s2.0-79958850265&partnerID=MN8TOARS>>.

Type of production: Scientific paper

Format: Journal

- 24** J. Sanchez; M. Acedo; D. Alegre; A. Alonso; J. Alonso; P. Alvarez; J. Arevalo; E. Ascasibar; A. Baciero; D. Baião; L. Barrera; E. Blanco; J. Botija; A. Bustos; E. de la Cal; I. Calvo; A. Cappa; D. Carralero; R. Carrasco; B. A. Carreras; F. Castejon; R. Castro; G. Catalan; A. A. Chmyga; M. Chamorro; L. Eliseev; L. Esteban; T. Estrada; J. A. Ferreira; J. M. Fontdecaba; L. Garcia; R. Garcia-Gomez; J. M. Garcia-Regana; P. Garcia-Sanchez; A. Gomez-Iglesias; S. Gonzalez; J. Guasp; T. Happel; J. Hernanz; J. Herranz; C. Hidalgo; J. A. Jimenez; A. Jimenez-Denche; R. Jimenez-Gomez; I. Kirpichev; A. D. Komarov; A. S. Kozachok; L. Krupnik; F. Lapayese; M. Liniers; D. Lopez-Bruna; A. Lopez-Fraguas; J. Lopez-Razola; T. Madeira; F. Martin-Diaz; F. Martin-Hernandez; A. B. Martin-Rojo; J. Martinez-Fernandez; K. J. McCarthy; F. Medina; M. Medrano; L. Melon; A. V. Melnikov; P. Mendez; B. van Milligen; E. Mirones; A. Molinero; M. Navarro; I. S. Nedzelskiy; M. Ochando; J. Olivares; E. Oyarzabal; J. L. de Pablos; L. Pacios; I. Pastor; M. A. Pedrosa; A. de la Pena; A. Pereira; A. Petrov; S. Petrov; A. Portas; G. Ratta; J. M. Reynolds; E. Rincon; L. Rios; C. Rodriguez; B. Rojo; J. A. Romero; A. Ros; M. Sanchez; E. Sanchez; G. Sanchez-Burillo; E. Sanchez-Sarabia; K. Sarkisian; J. A. Sebastian; C. Silva; E. R. Solano; A. Soletto; F. Tabares; D. Tafalla; J. Tera; A. Tolkachev; J. Vega; G. Velasco; J. L. Velasco; M. Weber; G. Wolfers; B. Zurro. Overview of TJ-II experiments. Nuclear Fusion. 51 - 9, 2011. Available on-line at: <http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcAuth=ORCID&SrcApp=OrcidOrg&DestLinkType=FullRecord&DestApp=WOS_CPL&KeyUT=WOS:0>

Type of production: Scientific paper

Format: Journal

- 25** L Barrera; E de la Luna; L Figini; M N A Beurskens; M Brix; F Castejón; P C de Vries; D Farina; M Kempenaars; P Lomas; J Mailloux; I Nunes; E Solano; JET-EFDA Contributors. Inboard and outboard electron temperature profile measurements in JET using ECE diagnostics. Plasma Phys. Control. Fusion. 09/07/2010.

Type of production: Scientific paper

Format: Journal

- 26** S. Zoletnik; M. Agostini; E. Belonohy; G. Bonhomme; D. Dunai; P. Lang; P. Garcia-Martinez; A.D. Gurchenko; C. Hidalgo; A. Kendl; G. Kocsis; C. Maszl; K. McCormick; H.W. Müller; S. Spagnolo; E.R. Solano; S. Soldatov; M. Spolaore; Y. Xu. Summary of the Workshop on Electric Fields, Turbulence and Self-organization in Magnetized Plasmas (EFTSOMP) 2009: 6-7 July 2009, Sofia, Bulgaria. 2010. Available on-line at: <<http://www.scopus.com/inward/record.url?eid=2-s2.0-77950660207&partnerID=MN8TOARS>>.
Type of production: Scientific paper **Format:** Journal
- 27** J SANCHEZ; M ACEDO; A ALONSO; J ALONSO; P ALVAREZ; E ASCASIBAR; A BACIERO; R BALBIN; L BARRERA; E BLANCO; J BOTIJA; A DE BUSTOS; E DE LA CAL; I CALVO; A CAPPÀ; JM CARMONA; D CARRALERO; R CARRASCO; BA CARRERAS; F CASTEJON; R CASTRO; G CATALAN; AA CHMYGA; M CHAMORRO; L ELISEEV; L ESTEBAN; T ESTRADA; A FERNANDEZ; R FERNANDEZ-GAVILAN; JA FERREIRA; JM FONTDECABA; C FUENTES; L GARCIA; I GARCIA-CORTES; R GARCIA-GOMEZ; JM GARCIA-REGANA; J GUASP; L GUIMARAIS; T HAPPEL; J HERNANZ; J HERRANZ; C HIDALGO; JA JIMENEZ; A JIMENEZ-DENCHE; R JIMENEZ-GOMEZ; D JIMENEZ-REY; I KIRPITCHEV; AD KOMAROV; AS KOZACHOK; L KRUPNIK; F LAPAYESE; M LINIERS; D LOPEZ-BRUNA; A LOPEZ-FRAGUAS; J LOPEZ-RAZOLA; A LOPEZ-SANCHEZ; S LYSENKO; G MARCON; F MARTIN; V MAURIN; KJ MCCARTHY; F MEDINA; M MEDRANO; AV MELNIKOV; P MENDEZ; B VAN MILLIGEN; E MIRONES; IS NEDZELSKIY; M OCHANDO; J OLIVARES; JL DE PABLOS; L PACIOS; I PASTOR; MA PEDROSA; A DE LA PENA; A PEREIRA; G PEREZ; D PEREZ-RISCO; A PETROV; S PETROV; A PORTAS; D PRETTY; D RAPISARDA; G RATTA; JM REYNOLDS; E RINCON; L RIOS; C RODRIGUEZ; JA ROMERO; A ROS; A SALAS; M SANCHEZ; E SANCHEZ; E SANCHEZ-SARABIA; K SARKSIAN; JA SEBASTIAN; C SILVA; S SCHCHEPETOV; N SKVORTSOVA; ER SOLANO; A SOLETO; F TABARES; D TAFALLA; A TARANCON; Y TASCHEV; J TERA; A TOLKACHEV; V TRIBALDOS; VI VARGAS; J VEGA; G VELASCO; JL VELASCO; M WEBER; G WOLFERS; B ZURRO. Confinement transitions in TJ-II under Li-coated wall conditions. Nuclear Fusion. 49 - 10, 2009.
Type of production: Scientific paper **Format:** Journal
- 28** F Romanelli; R Kamendje; JET-EFDA Contributors. Overview of JET results. Nuclear Fusion. 49 - 10, 2009.
Type of production: Scientific paper **Format:** Journal
- 29** MNA BEURSKENS; TH OSBORNE; LD HORTON; L FRASSINETTI; R GROEBNER; A LEONARD; P LOMAS; I NUNES; S SAARELMA; PB SNYDER; I BALBOA; B BRAY; K CROMBE; J FLANAGAN; C GIROUD; E GIOVANNONZI; M KEMPENAAERS; N KOHEN; A LOARTE; J LONNROTH; E DE LA LUNA; G MADDISON; C MAGGI; D MCDONALD; G MCKEE; R PASQUALOTTO; G SAIBENE; R SARTORI; E SOLANO; W SUTTROP; E WOLFRUM; M WALSH; Z YAN; L ZABEO; D ZARZOSO; JET-EFDA CONTRIBUTORS. Pedestal width and ELM size identity studies in JET and DIII-D; implications for ITER. PLASMA PHYSICS AND CONTROLLED FUSION. 51 - 12, 2009.
Type of production: Scientific paper **Format:** Journal
- 30** RA PITTS; G ARNOUX; M BEURSKENS; T EICH; W FUNDAMENSKI; A HUBER; A LOARTE; J MARKI; MF STAMP; P ANDREW; S BREZINSEK; HG ESSER; B GULEJOVA; S JACHMICH; A KRETER; E DE LA LUNA; GF MATTHEWS; V PHILIPPS; E SOLANO; JET EFDA CONTRIBUTORS. The impact of large ELMS on JET. JOURNAL OF NUCLEAR MATERIALS. 390-91, pp. 755 - 759. 2009.
Type of production: Scientific paper **Format:** Journal
- 31** R WHITE; ER SOLANO; RD HAZELTINE. Variational coordinate transformation in plasma physics. Physics of Plasmas. 16 - 11, 2009.
Type of production: Scientific paper **Format:** Journal
- 32** RJ JAYAKUMAR; MA AUSTIN; CM GREENFIELD; et al. Formation, sustainment and characteristics of current hole plasmas in DIII-D discharges. NUCLEAR FUSION. 48 - 1, 2008.
Type of production: Scientific paper **Format:** Journal



- 33** MNA BEURSKENS; G ARNOUX; AS BREZINSEK; et al. Pedestal and ELM response to impurity seeding in JET advanced scenario plasmas. NUCLEAR FUSION. 48 - 9, 2008.
Type of production: Scientific paper **Format:** Journal
- 34** MR Wade. Development in the DIII-D tokamak of advanced operating scenarios and associated control techniques for ITER. Nuclear Fusion. 47 - 10, pp. S543 - S562. 2007.
Type of production: Scientific paper **Format:** Journal
- 35** J SANCHEZ; M ACEDO; A ALONSO; et al. Overview of TJ-11 experiments. NUCLEAR FUSION. 47 - 10, pp. S677 - S685. 2007.
Type of production: Scientific paper **Format:** Journal
- 36** Emilia R. Solano; S. Jachmich; F. Villone; N. Hawkes; Y. Corre; R.A. Pitts; A. Loarte; B. Alper; K. Guenther; A. Koroktov; M. Stamp; P. Andrew; S.A. Arshad; J. Conboy; T. Bolzonella; E. Rachlew; M. Kempenaars; A. Cenedese; D. Testa. ELMs and strike point jumps. Journal of Nuclear Materials. 03/2005. ISSN 0022-3115
Type of production: Scientific paper **Format:** Journal
- 37** TC LUCE. Development of burning plasma and advanced scenarios in the DIII-D tokamak. NUCLEAR FUSION. 45 - 10, pp. S86 - S97. 2005.
Type of production: Scientific paper **Format:** Journal
- 38** C HIDALGO; C ALEJALDRE; A ALONSO; et al. Overview of TJ-II experiments. NUCLEAR FUSION. 45 - 10, pp. S266 - S275. 2005.
Type of production: Scientific paper **Format:** Journal
- 39** V COCCORESE; R ALBANESE; H ALTMANN; et al. Design of the new magnetic sensors for Joint European Torus. REVIEW OF SCIENTIFIC INSTRUMENTS. 75 - 10, pp. 4311 - 4313. 2004.
Type of production: Scientific paper **Format:** Journal
- 40** D. Testa; A. Fasoli; E. Solano; JET-EFDA Contributors. Diagnosis and study of Alfvén eigenmodes stability in JET (invited). Rev. Sci. Instrum. 2003.
Type of production: Scientific paper **Format:** Journal
- 41** J PAMELA; ER SOLANO; JET EFDA Contributors. Overview of JET results. NUCLEAR FUSION. 43 - 12, pp. 1540 - 1554. 2003. Available on-line at: <<http://dx.doi.org/10.1088/0029-5515/45/10/S06>>.
Type of production: Scientific paper **Format:** Journal
- 42** P CHAPPUIS; C DAMIANI; C GUERIN; et al. The design of a new JET divertor for high triangularity and high current scenarios. FUSION ENGINEERING AND DESIGN. 66-8, pp. 407 - 411. 2003.
Type of production: Scientific paper **Format:** Journal
- 43** Y IGITKHANOV; G JANESCHITZ; GW PACHER; et al. Edge parameter operational space and trajectories for ITER. PLASMA PHYSICS AND CONTROLLED FUSION. 40 - 5, pp. 837 - 844. 1998.
Type of production: Scientific paper **Format:** Journal
- 44** A LOARTE; N ASAKURA; H BOSCH; et al. Experimental edge results and multimachine comparisons. CONTRIBUTIONS TO PLASMA PHYSICS. 38 - 1-2, pp. 11 - 19. 1998.
Type of production: Scientific paper **Format:** Journal
- 45** PH EDMONDS; ER SOLANO; RV BRAVENEC; et al. A study for the installation of the TEXT heavy-ion beam probe on DIII-D. REVIEW OF SCIENTIFIC INSTRUMENTS. 68 - 1, pp. 320 - 323. 1997.
Type of production: Scientific paper **Format:** Journal

- 46** F NAJMABADI; J DRAKE; J FREIDBERG; et al. Alternative concepts: A report to the Fusion Energy Sciences Advisory Committee. JOURNAL OF FUSION ENERGY. 15 - 3-4, pp. 249 - 280. 1996.
Type of production: Scientific paper **Format:** Journal
- 47** S. B. Zheng; A. J. Wootton; Emilia R. Solano. Analytical tokamak equilibrium for shaped plasmas. Physics of Plasmas. 1996. ISSN 1070-664X
Type of production: Scientific paper **Format:** Journal
- 48** Emilia R. Solano. Fast ion orbits in spherical tokamaks. Physics of Plasmas. 1996.
Type of production: Scientific paper **Format:** Journal
- 49** DR ROBERTS; RV BRAVENEC; RD BENGTON; et al. H-mode development in TEXT-U limiter plasmas. PLASMA PHYSICS AND CONTROLLED FUSION. 38 - 8, pp. 1117 - 1125. 1996.
Type of production: Scientific paper **Format:** Journal
- 50** SC MCCOOL; AJ WOOTTON; RV BRAVENEC; et al. A MEGA-AMPERE SPHERICAL TOKAMAK DESIGN FOR BETA-LIMIT AND CONFINEMENT STUDIES. FUSION TECHNOLOGY. 27, pp. 444 - 447. 1995.
Type of production: Scientific paper **Format:** Journal
- 51** WL ROWAN; RD BENGTON; X BONNIN; et al. PARTICLE BALANCE IN DIVERTED PLASMAS IN TEXT-U. JOURNAL OF NUCLEAR MATERIALS. 222, pp. 668 - 671. 1995.
Type of production: Scientific paper **Format:** Journal
- 52** M. S. Foster; J. L. Craig; A. J. Wootton; P. E. Phillips; J. Uglum; E. R. Solano; D. L. Brower; Y. Jiang; S. C. McCool; J. Lierzer; George G. Castle. Vacuum compatible, variable cross-section magnetic coil diagnostic used in digital feedback control of plasma position in TEXT-Upgrade. Rev. Sci. Instrum. 1995. ISSN 0034-6748
Type of production: Scientific paper **Format:** Journal
- 53** ER SOLANO; RD HAZELTINE. NEOCLASSICAL KINETIC-THEORY NEAR AN X-POINT - PLATEAU REGIME. Physics of Plasmas. 1 - 3, pp. 548 - 551. 1994.
Type of production: Scientific paper **Format:** Journal
- 54** William L. Rowan; A. G. Meigs; E. R. Solano; P. M. Valanju; M. D. Calvin; R. D. Hazeltine. Rotation in Ohmically heated tokamaks: Experiment and theory. Physics of Fluids B: Plasma Physics. 1993. ISSN 0899-8221
Type of production: Scientific paper **Format:** Journal
- 55** RD HAZELTINE; MD CALVIN; PM VALANJU; et al. ANALYTICAL CALCULATION OF NEUTRAL TRANSPORT AND ITS EFFECT ON IONS. NUCLEAR FUSION. 32 - 1, pp. 3 - 14. 1992.
Type of production: Scientific paper **Format:** Journal
- 56** DP OBRIEN; LL LAO; ER SOLANO; et al. EQUILIBRIUM-ANALYSIS OF IRON CORE TOKAMAKS USING A FULL DOMAIN METHOD. NUCLEAR FUSION. 32 - 8, pp. 1351 - 1360. 1992.
Type of production: Scientific paper **Format:** Journal
- 57** PM VALANJU; MD CALVIN; RD HAZELTINE; et al. THE EFFECT OF CHARGE-EXCHANGE ON PLASMA FLOWS. PHYSICS OF FLUIDS B-PLASMA PHYSICS. 4 - 8, pp. 2675 - 2676. 1992.
Type of production: Scientific paper **Format:** Journal
- 58** ER SOLANO; RD HAZELTINE. EFFECT OF ASYMMETRIC SOURCES ON TOKAMAK NEOCLASSICAL TRANSPORT IN THE PLATEAU REGIME. PHYSICS OF FLUIDS B-PLASMA PHYSICS. 2 - 9, pp. 2113 - 2117. 1990.



Type of production: Scientific paper

Format: Journal

- 59** ER SOLANO. EFFECT OF PLASMA MINOR RADIUS CHANGES ON TOKAMAK POSITION STABILITY. Plasma Physics and Controlled Fusion. 32 - 9, pp. 759 - 762. 1990.

Type of production: Scientific paper

Format: Journal

- 60** ER SOLANO; JA ROME; SP HIRSHMAN. STUDY OF TRANSPORT IN THE FLEXIBLE HELIAC TJ-II. NUCLEAR FUSION. 28 - 1, pp. 157 - 168. 1988.

Type of production: Scientific paper

Format: Journal

- 61** Solano, ER; KC SHAING. CALCULATION OF NEOCLASSICAL FLUXES IN THE PLATEAU REGIME FOR NONAXISYMMETRIC TOROIDAL PLASMAS. Physics of Fluids. 30 - 2, pp. 462 - 466. 1987.

Type of production: Scientific paper

Format: Journal

- 62** F. Romanelli; JET Contributors. Overview of JET Results. Nuclear Fusion. 55, pp. 104001. 2015.

- 63** F. Romanelli; JET EFDA Contributors. Overview of JET results. Nuclear Fusion. 51, pp. 094008. 2011. Available on-line at: <<http://dx.doi.org/10.1088/0029-5515/51/9/094008>>.

- 64** PAMELA, J; STORK, D; SOLANO, E. Overview of results and possibilities for fast particle research on JET. NUCLEAR FUSION. 42 - 8 Pages: 1014-1028, 2002.

- 65** C. Gormezano; JET Team. Overview of JET results in support of the ITER physics basis. NUCLEAR FUSION. 41 - 10 Pages: 1327-1340, 10/2001.

Works submitted to national or international conferences

- 1** **Title of the work:** Experimental characterization of M-Mode in JET tokamak

Name of the conference: 42nd EPS Conference on Plasma Physics

Date of event: 2015

Organising entity: European Physical Society

N Vianello; ER Solano; E Delabie; J Hilllesheim; D Refy; P Buratti; J Boom; R Coelho; A Figueiredo; H Lerche; others.

- 2** **Title of the work:** Magnetic Oscillations near LH transition: experimental observations and comparisons with MHD theory

Name of the conference: 15th International Workshop on H-Mode and Transport Barrier Physics

Date of event: 2015

ER Solano; N Vianello; E Delabie; D Refy; S Zoletnik; J Hilllesheim; P Buratti; B Sieglin; R Coelho; JET Contributors. 2015.

- 3** **Title of the work:** Overview of hybrid development in JET with ITER-Like Wall

Name of the conference: 42nd EPS Conference on Plasma Physics

Date of event: 2015

Organising entity: European Physical Society

D Frigione; C Challis; J Garcia; J Hobirk; B Alper; G Artaserse; M Baruzzo; E Belonohy; A Brett; P Buratti; others.



- 4** **Title of the work:** Pedestal MHD stability at JET--an experimentalist's view
Name of the conference: 15th International Workshop on H-Mode and Transport Barrier Physics
Date of event: 2015
C Perez von Thun; L Frassinetti; M Beurskens; S Saarelma; I Lupelli; M Leyland; J Flanagan; C Giroud; M Tsalias; J Boom; others.
- 5** **Title of the work:** The relation between divertor conditions and the LH threshold on JET
Name of the conference: 42nd EPS Conference on Plasma Physics
Date of event: 2015
Organising entity: European Physical Society
E Delabie; CF Maggi; H Meyer; TM Biewer; C Bourdelle; M Brix; I Carvalho; AV Chankin; P Drewelow; C Guillemaut; others.
- 6** **Title of the work:** Effect of baseline and hybrid operational parameters on plasma confinement and stability in JET with a Be/W ITER-Like Wall
Name of the conference: 41st EPS Conference on Plasma Physics
Date of event: 2014
J Mailloux; M Beurskens; I Chapman; I Nunes; B Alper; M Baruzzo; PSA Belo; E Belonohy; J Bernardo; P Buratti; others.
- 7** **Title of the work:** Effect of fuelling location on pedestal and ELMs in JET
Name of the conference: 41st EPS Conference on Plasma Physics
Date of event: 2014
Emilia R Solano; EA Autricque; I Coffey; E Delabie; E de la Luna; P Drewelow; E Lerche; L Frassinetti; M Clever; I Nunes; others.
- 8** **Title of the work:** Impact of divertor geometry on ITER scenarios performance in the JET metallic wall
Name of the conference: 25th IAEA Fusion Energy Conference (FEC 2014)
Date of event: 2014
E Joffrin; J Garcia; P Tamain; E Belonohy; H Bufferand; P Buratti; C Challis; E Delabie; P Drewelow; D Dodt; others.
- 9** **Title of the work:** Investigation of the influence of divertor recycling on global plasma confinement in JET
Name of the conference: 21st International Conference on Plasma Surface Interactions 2014 (PSI 21)
Date of event: 2014
P Tamain; E Joffrin; H Bufferand; S Brezinsek; M Beurskens; G Ciraolo; M Clever; C Giroud; R Dejarnac; P Drewelow; others.
- 10** **Title of the work:** LH Transitions on JET with the ITER-like Wall
Name of the conference: 19th Joint EU-US Transport Task Force Meeting (TTF 2014)
Date of event: 2014
End date: 2014
E Delabie; CF Maggi; H Meyer; TM Biewer; C Bourdelle; M Brix; I Carvalho; P Drewelow; NC Hawkes; J Hillesheim; others.
- 11** **Title of the work:** Overview and interpretation of L-H threshold experiments on JET with the iter-like wall
Name of the conference: 25th IAEA Fusion Energy Conference (FEC 2014)
Date of event: 2014
E Delabie; C Maggi; H Meyer; TM Biewer; C Bourdelle; M Brix; IS Carvalho; M Clever; P Drewelow; N Hawkes; others.



- 12 Title of the work:** The effect of the accuracy of toroidal field measurements on spatial consistency of kinetic profiles at JET
Name of the conference: 28th Symposium on Fusion Technology (SOFT 2014)
Date of event: 2014
Type of contribution: Scientific book or monograph
E Belonohy; P Abreu; M Beurskens; J Boom; M Brix; J Flanagan; S Gerasimov; M Kempenaars; E de la Luna; I Lupelli; others. 2014.
- 13 Title of the work:** Tungsten sources and transport control in JET-ILW H-modes
Name of the conference: 21st International Conference on Plasma Surface Interactions 2014 (PSI 21)
Date of event: 2014
N Fedorczak; P Monier-Garbet; S Brezinsek; M Goniche; E Joffrin; E Lerche; B Lipschultz; E Luna; G Maddison; C Maggi; others.
- 14 Title of the work:** Dynamic of density profiles in JET during slow LH transition
Date of event: 2013
Organising entity: European Physical Society
Type of contribution: Scientific book or monograph
R Sabot; Ph Ghendrih; A Sirinelli; P Tamain; C Bourdelle; M Brix; G Calabro; E Delabie; G Dif-Pradalier; N Fedorczak; others. "40th EPS Conference on Plasma Physics". 2013.
- 15 Title of the work:** Experimental study of HL transitions in JET
Name of the conference: 40th EPS Conference on Plasma Physics
Date of event: 2013
Organising entity: European Physical Society
CF Maggi; E Delabie; N Hawkes; M Lehnen; G Calabro; F Rimini; ER Solano; JET EFDA Contributors.
- 16 Title of the work:** Characterization of ion cyclotron resonance heating in presence of the ITER-like wall in JET
Date of event: 2012
Organising entity: European Physical Society
Type of contribution: Scientific book or monograph
D Van Eester; E Lerche; P Jacquet; V Bobkov; A Czarna; JW Coenen; L Colas; Kristel Cromb{\e}; M Graham; S Jachmich; others. "39th European Physical Society Conference on Plasma Physics (EPS-2012)/16th International Congress on Plasma Physics (ICPP-2012)". 36, 2012.
- 17 Title of the work:** LH power threshold, confinement, and pedestal stability in JET with a metallic wall
Date of event: 2012
Organising entity: International Atomic Energy Agency
Type of contribution: Scientific book or monograph
MNA Beurskens; L Frassinetti; C Maggi; G Calabro; B Alper; C Angioni; C Bourdelle; S Brezinsek; P Buratti; C Challis; others. "24th IAEA Fusion Energy Conference 2012". 2013.
- 18 Title of the work:** ELM size analysis in JET advanced tokamak and hybrid scenarios
Date of event: 2010
Type of contribution: Scientific book or monograph
D Zarzoso; MNA Beurskens; Lorenzo Frassinetti; T Eich; E Joffrin; A Loarte; G Maddison; FG Rimini; G Saibene; ER Solano; others. "37th EPS Conference on Plasma Physics 2010, EPS 2010, 21 June 2010 through 25 June 2010, Dublin, Ireland". pp. 922 - 925. 2010.



- 19 Title of the work:** 3D MHD Equilibrium Calculations for Tokamaks with the HINT2 Code
Date of event: 2009
Organising entity: European Physical Society
Type of contribution: Scientific book or monograph
C Wiegmann; Y Suzuki; J Geiger; ER Solano; Y Liang; Y Sun; D Reiter; RC Wolf; others. "36th EPS Conference on Plasma Physics". 2009.
- 20 Title of the work:** ELMs, plasma current loss and strike point movements
Date of event: 2002
Type of contribution: Scientific book or monograph
ER Solano; F Villone; P Andrew; Y Corre; T Eich; A Loarte. "APS Meeting Abstracts". 1, pp. 1005 - 1005. 2002.
- 21 Title of the work:** JET-EP: the JET Enhancement Project
Name of the conference: 42nd Annual Meeting of the APS Division of Plasma Physics
City of event: Quebec, Canada
Date of event: 23/10/2000
Type of contribution: Scientific book or monograph
Jerome Pamela; Emilia Solano. "APS Meeting Abstracts". 1, pp. 1010 - 1010. 2000.
- 22 Title of the work:** Current Balance Analysis at the W7-AS Stellarator
Date of event: 1999
Organising entity: European Physical Society
Type of contribution: Scientific book or monograph
C Wendland; U Gasparino; H Maa{\ss}berg; ER Solano; others. "26th EPS Conference on Controlled Fusion and Plasma Physics". 1999.
- 23 Title of the work:** Steady State Bifurcations in Tokamaks
Date of event: 1998
ER Solano. "APS Division of Plasma Physics Meeting Abstracts". 1,
- 24 Title of the work:** H-mode and Density Limit Operational Space for ITER
Date of event: 1997
Type of contribution: Scientific book or monograph
D Post; A Hubbard; Y Igitkhanov; G Janeschitz; J Lingertat; A Loarte; O Pogutse; G Pacher; H Pacher; E Solano; others. "APS Meeting Abstracts". 1, 1997.
- 25 Title of the work:** Characterization of Divertor Asymmetries in TEXT-Upgrade: Simulation and Experiment
Date of event: 1996
X Bonnin; WL Rowan; RD Bengtson; JL Craig; KW Gentle; ER Solano; DJ Storek; DL Winslow. "APS Division of Plasma Physics Meeting Abstracts". 1,



R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1** **Committee title:** Alternate Concepts panel of the Science Subcommittee
City: United States of America
Affiliation entity: Office of Fusion Energy, Department of Energy, USA
City affiliation entity: United States of America
Start-End date: 12/1995 - 06/1996
- 2** **Committee title:** Science Subcommittee of the Consultative Committee for Fusion Energy (FEAD)
City: United States of America
Affiliation entity: Office of Fusion Energy, Department of Energy, USA
City affiliation entity: United States of America
Start-End date: 12/1995 - 06/1996
- 3** **Committee title:** Selection Committee of National Undergraduate Fellowship Program
Affiliation entity: University Fusion Association and Princeton University Plasma Physics Laboratory
Start-End date: 1994 - 1994

Organization of R&D activities

- 1** **Title of the activity:** EPS-DPP Board Member, elected position
Type of activity: Organisation of the annual EPS Conference on Controlled Fusion and Plasma Physics: selection of Programme Committee, oversight of conference.
Convening entity: European Physical Society, Division of Plasma Physics
Start-End date: 2012 - 2020
- 2** **Title of the activity:** Plasma Physics and Controlled Fusion
Type of activity: Member of Editorial Board
Convening entity: Institute of Physics, UK
Start-End date: 2005 - 2008
- 3** **Title of the activity:** Chair of Magnetic Confinement Group of Programme Committee
Type of activity: Selection of speakers for invited and oral talks, organisation of 1st Women in Plasma Physics Meeting at the EPS Conference.
Convening entity: European Physical Society, Division of Plasma Physics
Start-End date: 2003 - 07/2004
- 4** **Title of the activity:** Alternate Concepts panel of the Science Subcommittee
Type of activity: strategy for alternate concepts in the magnetic confinement fusion programme in the USA.
Convening entity: Office of Fusion Energy, Department of Energy, USA
Start-End date: 12/1995 - 06/1996
- 5** **Title of the activity:** Science Subcommittee of the Consultative Committee for Fusion Energy (FEAD)
Type of activity: Advise the Department of Energy on strategy for the magnetic confinement fusion programme in the USA.
Convening entity: Office of Fusion Energy, Department of Energy, USA

**Start-End date:** 12/1995 - 06/1996

R&D management

- 1 Name of the activity:** JET Physics Programme
Type of management: Programme management
Performed tasks: Responsible Officer for JET Physics Programme: coordination of researchers and data validation, writing of Annual Report
Entity: EUROfusion
Start date: 01/2015 **Duration:** 1 year - 10 months
- 2 Name of the activity:** JET Enhancements Department
Type of management: Programme management
Performed tasks: Diagnostic Responsible Officer, coordination of diagnosticians, project management of Diagnostic Enhancement projects, Data Validation.
Entity: JET EFDA CSU
Start date: 03/2013 **Duration:** 1 year - 9 months
- 3 Name of the activity:** Scientific Assistant to JET EFDA Leader
Type of management: Programme management
Performed tasks: Chair of JET EFDA Seminars; Coordination of JET TFLs and researchers for writing the JET-EP proposal. Led team to write long term physics programme to accompany enhancement proposal..
Entity: JET EFDA CSU **Type of entity:** Public Research Body
Start date: 01/2000 **Duration:** 3 years

Other achievements

Stays in public or private R&D centres

- 1 Entity:** EuroFusion **Type of entity:** Public Research Body
Faculty, institute or centre: JET
City of entity: Abingdon, United Kingdom
Start-End date: 11/2015 - 09/2016 **Duration:** 11 months
Funding entity: EUROFusion
Goals of the stay: Research
Provable tasks: Research
Relevant results: Studies of L-H transition, W radiation in pedestal, equilibrium reconstruction
- 2 Entity:** EuroFusion **Type of entity:** Public Research Body
Faculty, institute or centre: JET PMU
City of entity: Abingdon, United Kingdom
Start-End date: 01/2015 - 10/2015 **Duration:** 7 months
Funding entity: EUROFusion
Goals of the stay: Seconded from CIEMAT
Provable tasks: Scientific Management, JET RO
Relevant results: Studies of L-H transition, W radiation in pedestal, equilibrium reconstruction



- 3** **Entity:** EFDA **Type of entity:** Public Research Body
Faculty, institute or centre: JET CSU
City of entity: Abingdon, United Kingdom
Start-End date: 09/2013 - 12/2014 **Duration:** 1 year - 3 months
Funding entity: EUROFusion
Goals of the stay: Research
Provable tasks: Data Validation, Diagnostic Coordinator, equilibrium, pedestal, ELM and MHD expertise.
Relevant results: Studies of L-H transition, W radiation in pedestal, equilibrium reconstruction
- 4** **Entity:** General Atomics
City of entity: San Diego, United States of America
Start-End date: 01/2011 - 02/2011
Goals of the stay: Guest
Relevant results: Scoping study to compare JET Outer Mode and DIII-D Edge Harmonic Oscillation, with K. Burrell
- 5** **Entity:** University of Texas at Austin **Type of entity:** University
Faculty, institute or centre: Institute for Fusion Studies
City of entity: Austin, United States of America
Start-End date: 12/2010 - 12/2010 **Duration:** 1 month
Goals of the stay: Guest
Relevant results: Study of criticality theory and plasma phase transitions
- 6** **Entity:** JET Operating Contract
City of entity: Culham, United Kingdom
Start-End date: 07/2007 - 04/2010
Goals of the stay: Contracted
Relevant results: improvement of equilibrium reconstruction at JET, ELM studies, transport barrier studies.
- 7** **Entity:** University of Texas at Austin **Type of entity:** University
Faculty, institute or centre: Institute for Fusion Studies
City of entity: Austin, United States of America
Start-End date: 02/2008 - 03/2008 **Duration:** 2 months
Goals of the stay: Guest
Provable tasks: study of criticality theory and plasma phase transitions
Relevant results: Study of criticality theory and plasma phase transitions
- 8** **Entity:** General Atomics **Type of entity:** R&D Centre
City of entity: San Diego, United States of America
Start-End date: 05/2007 - 06/2007 **Duration:** 1 month
Goals of the stay: Guest
Provable tasks: presentation of JET strike point jumps and of theory results, collaboration on EFIT
Relevant results: Experimental study of current holes in DIII-D.
- 9** **Entity:** University of Texas at Austin **Type of entity:** University
Faculty, institute or centre: Institute for Fusion Studies
City of entity: Austin, United States of America
Start-End date: 04/2007 - 05/2007 **Duration:** 1 month
Goals of the stay: Guest



- 10** **Entity:** Australian National University
Faculty, institute or centre: Physics
City of entity: Canberra, Australia
Start-End date: 10/2006 - 12/2006
Goals of the stay: Guest
Provable tasks: study of criticality theory
Type of entity: University
Duration: 2 months - 20 days
- 11** **Entity:** General Atomics
City of entity: San Diego, United States of America
Start-End date: 07/2004 - 08/2004
Goals of the stay: Guest
Relevant results: Experimental study of current holes in DIII-D.
- 12** **Entity:** EFDA
Faculty, institute or centre: JET
City of entity: Abingdon, United Kingdom
Start-End date: 02/2003 - 03/2003
Goals of the stay: Seconded from CIEMAT, contracted
Provable tasks: experimental study of ELMs and current holes in JET
Type of entity: Public Research Body
Duration: 2 months
- 13** **Entity:** JET
Faculty, institute or centre: EFDA CSU
City of entity: Abingdon, United Kingdom
Start-End date: 02/1999 - 12/2002
Goals of the stay: Seconded from CIEMAT, contracted
Provable tasks: Scientific assistance to JET director.
Type of entity: R&D Centre
Duration: 3 years - 10 months
- 14** **Entity:** Max Plank Institute
Faculty, institute or centre: Institut fur Plasmaphysick
City of entity: Garching, Germany
Start-End date: 05/1997 - 11/1998
Goals of the stay: Guest
Provable tasks: study of edge plasmas for ITER and calculation of neoclassical transport for W7AS
Type of entity: R&D Centre
Duration: 1 year - 5 months
- 15** **Entity:** University of Texas
Faculty, institute or centre: Fusion Research Center
City of entity: Austin, United States of America
Start-End date: 05/1987 - 06/1986
Goals of the stay: Post-doctoral
Provable tasks: design of the TEXT-Upgrade tokamak, studies of equilibrium, stability and control of plasma, studies on neoclassical transport in tokamaks
Type of entity: University
Duration: 9 years
- 16** **Entity:** Oak Ridge National Laboratory
Faculty, institute or centre: Fusion Energy Division
City of entity: Oak Ridge, United States of America
Start-End date: 03/1985 - 03/1986
Goals of the stay: Doctorate
Provable tasks: : calculation of neoclassical transport coefficients for the TJ-II fusion research device
Type of entity: R&D Centre
Duration: 1 year