

Tuesday 5th June, 2012

Home Address: via Isonzo 70, 35143, Padova, Italy
 Work Address: Consorzio RFX, C.so Stati Uniti 4, 35127, Padova, Italy
 ☎: +39 3480664109
 ☎: +39 0498295991
 FAX: +39 0498700718
 ✉: nicola.vianello@igi.cnr.it

Personal Information

Name: Nicola Vianello
Date and Place of Birth: Mestre-Venezia, 14 August 1975
Citizenship: Italian
Home address: via Isonzo 70, 35143, Padova, Italy
Work address: c/o Consorzio RFX, Associazione Euratom-ENEA sulla Fusione
 C.so Stati Uniti 4, 35127 Padova, Italy

Education and Qualifications

1994 **High School** Liceo Scientifico U. Morin, Mestre, Venezia, *56 out 60*
 March 1999 **Laurea in Fisica** Università degli Studi di Padova, Padova, Italy
 (M.Sci Physics) *110 out 110 cum Laude*
 Thesis Title: *Trasporto di particelle ed energia per effetto di turbolenza elettrostatica in plasmii confinati in configurazione Reversed Field Pinch*
 (Particle and energy transport induced by electrostatic turbulence in Reversed Field Pinch plasmas)
 Supervisor: Prof. S. Lo Russo, Dr. V. Antoni
 Topics: Electrostatic anomalous transport. Sheared Flows.
 Active modification of boundary flow through edge biasing
 March 2002 **Ph.D in Energetics** Università degli Studi di Padova, Padova, Italy
 Thesis Title: *Self-organization phenomena and coherent structure generation in magnetized plasmas*
 Supervisor: Prof. A. Buffa, Dr. V. Antoni
 Topics: Electromagnetic turbulence in Reversed Field Pinches and Tokamaks.
 Anomalous transport. Self Organized Criticality.

Further Education

2000 October **International School of Plasma Physics and Ultrafast Optics** Capri, Italy
 2001 September **5th Carolus Magnus Euro-Summer School on Plasma and Fusion Energy Physics** Badhonnef, Germany
 2002 January **International School on Topics in Nonlinear Dynamics** Venice, Italy
 2011 June **5th International Iter Summer School** Aix-en-Provence, France
 MHD and Energetic Particles

Employment

March-October 1999 **Consorzio RFX, Padova, Italy** Research fellow
 November 2002 - April 2003 **Consorzio RFX, Padova, Italy** Research fellow
 May 2003-December 2005 **Consorzio RFX, Padova, Italy** Research Scientist
 January 2006 - July 2009 **Consorzio RFX, Padova, Italy** Research Scientist, Permanent position
 July 2009 - Date **Consiglio Nazionale delle Ricerche (Research National Institute)** Researcher, Permanent position
 Padova, Italy *See Competition section*

Further experiences

2001 5 March-15 June Visiting scientist under Royal Institute of Technology

2002	1 May-30 June	EURATOM-Mobility staff movement Visiting scientist under EURATOM-Mobility staff movement	Stockholm, Sweden Royal Institute of Technology Stockholm, Sweden
2003	2 March-30 April	Visiting scientist under EURATOM-Mobility staff movement	Royal Institute of Technology Stockholm, Sweden
2004	19 April -19 June	Visiting scientist under EURATOM-Mobility staff movement	Royal Institute of Technology Stockholm, Sweden
2005	16 October - 19 November	Visiting scientist under EURATOM-Mobility staff movement	Risø National Laboratory Risø, Denmark
2008	11 - 15 February	Visiting scientist under EURATOM-Mobility staff movement	Max-Planck Institut für Plasmaphysik Garching, Germany
2009	12 - 15 May	Visiting scientist under EURATOM-Mobility staff movement	Max-Planck Institut für Plasmaphysik Garching, Germany
2009	09 - 13 November	Visiting scientist under EURATOM-Mobility staff movement	Centre der Recherches en Physique des Plasmas, EPFL, Lausanne, Switzerland
2011	07 - 11 March	Visiting scientist under EURATOM-Mobility staff movement	Royal Institute of Technology Stockholm, Sweden
2011	13 - 15 April	Visiting scientist under EURATOM-Mobility staff movement	The National Fusion Laboratory, CIEMAT Madrid, Spain
2011	23 - 27 May	Visiting scientist under EURATOM-Mobility staff movement	Max-Planck Institut für Plasmaphysik Garching, Germany
2012	06 February - 30 March	Secondment Staff	JET, Culham Centre for Fusion Science Culham, Oxford, UK

National and International Conferences

2000	September	EU-US Turbulence Task Force (TTF) workshop	Varenna, Italy
2002	April	7 th Easter Plasma Meeting	Torino, Italy
2002	June	29 th EPS Conference on Plasma Physics and Controlled Fusion	Montreux, Switzerland
2003	October	45 th APS-Division of Fusion Plasma Physics Conference	Albuquerque, NM, USA
2004	May	10 th IEA/RFP Workshop	Padova, Italy
2004	June	31 th EPS Conference on Plasma Physics	London, UK
2004	September	EU-US Turbulence Task Force (TTF) workshop	Varenna, Italy
2004	November	46 th APS-Division of Fusion Plasma Physics Conference	Savannah, GA, USA
2005	July	8 th International Workshop on the Interrelationship between Plasma Experiments in Laboratory and Space	Tromsø, Norway
2005	September	11 th IEA/RFP Workshop	Madison, WI, USA
2006	June	33 th EPS Conference on Plasma Physics and Controlled Fusion	Rome, Italy
2006	October	48 th APS-Division of Fusion Plasma Physics Conference	Philadelphia, PA, USA
2007	April	12 th US-EU Transport Taskforce Workshop	San Diego, CA, USA
2007	September	Momentum transport in jets, disks and laboratory plasmas	Alba, Italy
2008	June	35 th EPS Conference on Plasma Physics	Hersonissos, Greece
2008	June	EFTSOMP2008 - Workshop on Electric Fields, Turbulence and Self-Organisation in Magnetized Plasmas	Hersonissos, Greece
2008	September	EU-US Turbulence Task Force (TTF) workshop	Copenhagen, Denmark
2008	October	13 th IEA/RFP Workshop	Stockholm, Sweden
2009	March	Workshop on Cross-Scale Coupling in Plasmas	Cosenza, Italy
2009	June	35 th EPS Conference on Plasma Physics and Controlled Fusion	Sofia, Bulgaria
2009	September	2 nd EFDA Transport Topical Group Meeting	JET, Culham, UK
2010	April	14 th IEA/RFP Workshop	Padova, Italy
2010	November	52 th APS-Division of Fusion Plasma Physics Conference	Chicago, IL, USA

2011 October 15th IEA/RFP Workshop

Madison, WI, USA

Invited lectures and conference talk

July 2012 **Workshop on Electric Field, Turbulence and Self-Organisation in Magnetized Plasmas** *The role of 3D fields on edge and SOL turbulence*

Competition

May 2009 Public selection (Ref. 364/13) held by Consiglio Nazionale delle Ricerche. Advisor Committee:

- Prof. A. Fasoli, Full Professor, Ecole Polytechnique Federal Lausanne, Switzerland
- Dr. V. Antoni, Director Istituto Gas Ionizzati, Consiglio Nazionale delle Ricerche
- Dr. D. Farina, Research Scientist, Istituto di Fisica del Plasma, Consiglio Nazionale delle ricerche, Milano

The competition included two written exams and one colloquium. The candidate results the winner of the competition with a final mark of 104.5/120

Skills

IT skills

Operating systems Linux, Unix, Windows, Mac Os X, Open VMS
Programming Fortran 77/90, IDL (Interactive Data Language), Python, C, Bash Scripting
 COMSOL, Mathematica, Gnuplot, GIT Version Control
Office Microsoft Office (Word, Excel, Powerpoint), iWork, L^AT_EX, web, emails
Design Adobe InDesign, Adobe Illustrator

Technical skills

- Competences in data analysis and interpretation
- Competences in image processing
- Competences in fluid numerical modeling
- Competences in designing and projecting electrostatic and magnetic plasma diagnostics
- Competences in UHV technology and plasma facing and ultra high vacuum compliant materials
- Competences in data acquisition through MDSPLUS technology

Languages

Language	Oral	Written
Italian	Native	Native
English	Fluent	Fluent

Pedagogical activities

Teaching

2008-2009 Assistant for the course *Fluid and Plasma Physics*
 tenured Prof. Tommaso Bolzonella
 Total h 4

- Subject:** Seminar on MHD and Fluid turbulence. A summary is presented on the theory and experimental results on turbulence, both in ordinary fluid and in plasmas. A description of the most recent results regarding turbulence and eddy's characterization in thermonuclear relevant plasmas is given. Exercises on fluid turbulence
- 2010** Assistant for the course *Fluid and Plasma Physics*
tenured Prof. Tommaso Bolzonella
Total h 6
Subject: Tangential stress in ordinary fluids. Seminar on MHD and Fluid turbulence (see previous years)
- 2011-2012** Assistant for the course *Fundamentals of Plasma Physics*
tenured Prof. Gianluigi Serianni
Total h. 10
Subject: Plasma oscillations, Langmuir Waves, Ion Acoustic waves, Upper and Lower hybrid waves, Whistler waves, MHD waves (magneto-acoustic, Alfvén waves)

Supervising

- 2007** Supervisor for Bachelor Thesis in Physics, University of Padova
Candidate: Alessandro Scaggion
Thesis title: *Electrostatic fluctuations characterization in RFX-mod experiment in different experimental condition*
Thesis subject: Characterization of floating potential measurements as obtained from an internal array of sensors in different discharge conditions highlighting dependence on equilibrium and density.
- 2009** Supervisor for M.Sci. Thesis in Physics, University of Padova
Candidate: Alessandro Scaggion
Thesis title: *Filamentary structures in the edge turbulence of fusion devices*
Thesis subject: Characterization of turbulence electromagnetic structures in two different devices: RFX-mod Reversed Field Pinch experiment, characterized by the presence of Drift-Alfvén filaments, and ASDEX-Upgrade tokamak, with emphasis on type I ELM's filaments
- 2011** Supervisor for Bachelor Thesis in Physics, University of Padova
Candidate: Alberto Mazzi
Thesis title: *Experimental evaluation of toroidal velocity distribution in the edge region of RFX-mod and its impact on high density regimes*
Thesis subject: Experimental determination of the spatio-temporal distribution of the toroidal velocity in RFX-mod and its relationship with edge magnetic topology. The strong link between magnetic islands and plasma flow distribution is addressed.

Duties and Responsibilities

- 2010 - Date** Responsible Scientist for edge manipulators in RFX-mod device. Responsibilities implies the maintenance and improvement of the two manipulators used in RFX-mod for the insertion of edge probes, including maintenance and improvement of the probe heads. Development of new complex probe head, project which has required the coordination between design, mechanical and diagnostic technicians.
- 2009** Task force leader in RFX-mod experiment for task force *Particle, Momentum and energy transport*. The task force was in charge to implement experimental proposals aimed to the comprehension of physical mechanisms which regulate particle momentum and energy transport in RFX-mod. The task force leaders together with the Scientific Coordinators take part to the decision processes concerning the experimental program of the machine, deciding priorities and objectives.

- 2010** Task force leader in RFX-mod experiment for task force *Physics integration for high performance RFP*. The task force aimed to coordinate all the efforts devoted to the comprehension of the physical mechanism behind the appearance of improved confinement regimes in RFX-mod, to establish the physical requirement for a controlled achievement of h-mode confinement regime and to explore all the still open basic physics issues whose knowledge could help to improve plasma performances. As in the previous year the task force leaders take part to the scientific program schedule, coordinating in particular the activities for the high current performance operations.
- 2011** Coordinator of the EFDA working group *3D field effects in edge and SOL and diagnostic development* under EFDA Transport Topical Group. This working group has been established to coordinate the effort promoted by different EFDA associations on the following subject:
1. Investigation on the effect of non-axisymmetric fields on the filamentary structures (L and H-mode regimes)
 2. Investigation into changes in edge transport due to the application of 3D fields
 3. Characterization of the edge turbulence in these 3D situations (including effect of ion temperature and 3D fast particle losses)
 4. Edge turbulence and transport modeling by incorporating 3D field effects into the codes.
 5. Comparison studies between tokamaks, stellarators and RFPs on the above topics.
- The coordinators promote exchange of results between different association and the definition of common objectives which facilitate the comparison between different devices.
- 2012** Member of the Program committee of the 17th Joint EU-US Transport Task Force Meeting in combination with the 4th EFDA Transport Topical Group meeting, 3-6 September 2012, Padova, Italy

Summary of research interest

I've been involved in fusion plasma science since my M.Sci. thesis in Physics in 1999. During these 13 years I've tried to expand as much as possible my personal research skills focusing in particular on collection, analysis, interpretation and modeling of experimental data collected in fusion oriented experiments (Reversed Field Pinches, Tokamaks and Stellarators), with particular emphasis on the comparison with theoretical and numerical results. Main research subjects may be summarized as follow:

- (a) **Electromagnetic turbulence induced transport:**, with emphasis on anomalous transport studies induced by different source of turbulence: electrostatic as Drift-induced or interchange induced transport, or electromagnetic including the role of magnetic flutter fluxes in the mechanism of particle and energy losses
- (b) **Statistical analysis of plasma turbulence:** the topic allowed me to get confident with advanced statistical tool (as Wavelet Transforms, Local Intermittency Measurements, Waiting Time distribution) and with dynamical system model as Self-Organized Criticality (SOC) systems, shell-models
- (c) **Blobs and ELM filaments:** non linear coherent structures arising as a non-linear evolution of plasma instabilities have been experimentally investigated. The research includes studies on the generation and evolution of these structures including their parallel dynamics with emphasis on turbulent *blobs* and ELM *filaments*
- (d) **Sheared flow generation** and non linear interaction between turbulence and sheared flows including experimental investigation of the role of Maxwell and Reynolds stress in the momentum generation of edge flow in Reversed Field Pinches
- (e) **Numerical modeling of electromagnetic plasma turbulence** using fluid approach
- (f) **Magnetic topology and its relation with plasma flow**, with emphasis on the effect of non-axisymmetric magnetic field perturbation on kinetic properties of the plasma, as plasma flow, ambipolar electric field and Plasma Wall Interaction

- (g) **Beam plasma interaction** with emphasis on Alfvén instabilities, Energetic Particle Driven instabilities, and turbulent transport of energetic ions

Among the results the following should be highlighted:

- (i) First experimental proof of non applicability of *Self Organized Criticality* paradigm to edge plasma turbulence [8, 3]
- (ii) First experimental evidence of non-linear generation of edge flow in Reversed Field Pinches through Reynolds stress mechanism [29, 28]
- (iii) First experimental measurements of parallel current associated to coherent structures in a fusion relevant plasma [53]
- (iv) First experimental evidence of the existence of a particular class of coherent structure, named *Drift-Kinetic Alfvén vortices*, arising because of the non linear coupling of Drift and Kinetic Alfvén waves in a laboratory plasma [62]. This type of structure has been previously detected in the magnetosphere
- (v) First experimental estimate of parallel current associated to Edge Localized Modes filament [75]
- (vi) First experimental measurements of 2D current distribution associated to plasma blobs [64]
- (vii) Experimental evidence of transition towards helical states in high current Reversed Field Pinch operation [45]

In all my carrier I've always tried to conjugate a strong experimental insight on the data collection, participating in all the experimental activities mandatory in order to obtain useful experimental results, and a rigorous theoretical approach in the data analysis and interpretation, using theories and numerical tools as a framework to understand real plasma signals. This approach helped me to build a bridge between theories and experiments, a necessary effort in order to understand complex plasma dynamics.

Active collaborations

Institute	Contact person	Subject
Risø National Laboratory	V. Naulin & J. Rasmussen	Edge turbulence in tokamaks, including ELM filaments. Fluid turbulence codes
CRPP Lausanne	I. Furno	Blobs in Simple Toroidal Torus
CIEMAT, Spain	D. Carallero & C. Hidalgo	Edge filament structures in Stellarators
KTH Stockholm	H. Bergsaker & L. Frassinetti	Characterization of the edge region of RFP experiment Extrap-T2R
MIT, Boston	J. Terry	Edge turbulence in Alcator C-Mod
IPP, Garching	H. W. Müller	Electromagnetic turbulence at the edge of ASDEX-Upgrade, ELMs

Other

I'm regular referee for Plasma Physics and Controlled Fusion, Nuclear Fusion, New Journal of Physics

Publications

I have authored a total number of 145 papers and conference proceedings.

h-index factor: 17 according to ISI Web of Knowledge (last update Tuesday 5th June, 2012)

*

Refereed research papers

1. V. Antoni, R. Cavazzana, L. Fattorini, E. Martines, G. Serianni, M. Spolaore, L. Tramontin, and N. Vianello (2000). Effects of pulsed poloidal current drive on the edge region of a reversed field pinch plasma. *Plasma Physics and Controlled Fusion* 42(8), 893–904.

2. V. Antoni, E. Martines, D. Desideri, L. Fattorini, G. Serianni, M. Spolaore, L. Tramontin, and N. Vianello (2000). Electrostatic transport reduction induced by flow shear modification in a reversed field pinch plasma. *Plasma Physics and Controlled Fusion* **42**(2), 83–90.
3. V. Antoni, V. Carbone, R. Cavazzana, G. Regnoli, N. Vianello, E. Spada, L. Fattorini, E. Martines, G. Serianni, M. Spolaore, L. Tramontin, and P. Veltri (2001). Transport processes in reversed-field-pinch plasmas: Inconsistency with the self-organized-criticality paradigm. *Phys. Rev. Lett.* **87**(4), 045001.
4. V. Antoni, V. Carbone, E. Martines, G. Regnoli, G. Serianni, N. Vianello, and P. Veltri (2001). Electrostatic turbulence intermittency and MHD relaxation phenomena in a RFP plasma. *Europhys Lett* **54**(1), 51–57.
5. V. Antoni, M. Valisa, L. Apolloni, M. Bagatin, W. Baker, O. Barana, R. Bartiromo, P. Bettini, A. Boboc, T. Bolzonella, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, G. Chitarin, S. Costa, F. D'Angelo, S. D. Bello, A. D. Lorenzi, D. Desideri, D. F. Escande, L. Fattorini, P. Fiorentin, P. Franz, E. Gaio, L. Garzotti, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, P. Innocente, A. Intravaia, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, L. Marrelli, P. Martin, E. Martines, S. Martini, A. Maschio, A. Masiello, F. Milani, M. Moresco, A. Murari, P. Nielsen, M. O'Gorman, S. Ortolani, R. Paccagnella, R. Pasqualotto, B. Pegourie, S. Peruzzo, R. Piovan, N. Pomaro, A. Ponno, G. Preti, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, G. Spizzo, M. Spolaore, C. Taliercio, G. Telesca, D. Terranova, V. Toigo, L. Tramontin, N. Vianello, M. Viterbo, L. Zabeo, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, and G. Zollino (2001). Transport mechanisms and enhanced confinement studies in RFX. *Nucl. Fusion* **41**(4), 431–436.
6. E. Martines, M. Spolaore, V. Antoni, G. Regnoli, N. Vianello, R. Cavazzana, G. Serianni, and L. Tramontin (2001). E x B velocity shear and intermittent structures in RFX. *Czechoslovak Journal Of Physics* **51**(10), 983–993.
7. G. Serianni, V. Antoni, H. Bergs aker, P. R. Brunell, J. Drake, M. Spolaore, H. Satherblom, and N. Vianello (2001). Electrostatic fluxes and plasma rotation in the edge region of EXTRAP-T2R. *Czechoslovak Journal Of Physics* **51**(10), 1119–1127.
8. E. Spada, V. Carbone, R. Cavazzana, L. Fattorini, G. Regnoli, N. Vianello, V. Antoni, E. Martines, G. Serianni, M. Spolaore, and L. Tramontin (2001). Search of self-organized criticality processes in magnetically confined plasmas: Hints from the reversed field pinch configuration. *Phys. Rev. Lett.* **86**(14), 3032–3035.
9. M. Spolaore, V. Antoni, M. Bagatin, D. Desideri, L. Fattorini, E. Martines, G. Serianni, L. Tramontin, and N. Vianello (2001). Study of edge plasma properties comparing operation in hydrogen and helium in RFX. *Journal of Nuclear Materials* **290–293**, 729–732.
10. V. Carbone, R. Cavazzana, V. Antoni, L. Sorriso-Valvo, E. Spada, G. Regnoli, P. Giuliani, N. Vianello, F. Lepreti, R. Bruno, E. Martines, and P. Veltri (2002). To what extent can dynamical models describe statistical features of turbulent flows? *Europhys Lett* **58**(3), 349–355.
11. E. Martines, V. Antoni, R. Cavazzana, G. Regnoli, G. Serianni, M. Spolaore, N. Vianello, M. Hron, and J. Stockel (2002). Coherent structures in the plasma edge turbulence of the RFX and CASTOR experiments. *Czechoslovak Journal Of Physics* **52**, 13–24.
12. P. Martin, S. Martini, V. Antoni, L. Apolloni, M. Bagatin, W. Baker, O. Barana, R. Bartiromo, P. Bettini, A. Boboc, T. Bolzonella, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, G. Chitarin, S. Costa, F. D'Angelo, S. D. Bello, A. D. Lorenzi, D. Desideri, D. F. Escande, L. Fattorini, P. Fiorentin, P. Franz, E. Gaio, L. Garzotti, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, P. Innocente, A. Intravaia, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, L. Marrelli, E. Martines, A. Maschio, A. Masiello, F. Milani, M. Moresco, A. Murari, P. Nielsen, M. O'Gorman, S. Ortolani, R. Paccagnella, R. Pasqualotto, B. Pegourie, S. Peruzzo, R. Piovan, N. Pomaro, A. Ponno, G. Preti, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, G. Spizzo, M. Spolaore, C. Taliercio, G. Telesca, D. Terranova, V. Toigo, L. Tramontin, M. Valisa, N. Vianello, M. Viterbo, L. Zabeo, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, and G. Zollino (2002). New insights into MHD dynamics of magnetically confined plasmas from experiments in RFX. *Nucl. Fusion* **42**(3), 247–257.
13. M. Spolaore, V. Antoni, R. Cavazzana, G. Regnoli, G. Serianni, E. Spada, N. Vianello, H. Bergs aker, and J. Drake (2002). Effects of ExB velocity shear on electrostatic structures. *Phys. Plasmas* **9**(10), 4110–4113.
14. L. Tramontin, L. Garzotti, V. Antoni, L. Carraro, D. Desideri, P. Innocente, E. Martines, G. Serianni, M. Spolaore, and N. Vianello (2002). Particle balance during edge biasing experiments in the reversed field pinch RFX. *Plasma Physics and Controlled Fusion* **44**(2), 195–204.
15. N. Vianello, M. Spolaore, G. Serianni, H. Bergs aker, V. Antoni, and J. Drake (2002). Properties of the edge plasma in the rebuilt Extrap-T2R reversed field pinch experiment. *Plasma Physics and Controlled Fusion* **44**(12), 2513–2523.
16. V. Antoni, M. Bagatin, G. Serianni, N. Vianello, M. Zuin, F. Paganucci, P. Rossetti, and M. Andrenucci (2003). Plasma Fluctuations in an Applied Field MPD Thruster. *AIP Conf. Proc.* **669**(1), 302–305.
17. V. Antoni, H. Bergs aker, G. Serianni, M. Spolaore, N. Vianello, R. Cavazzana, G. Regnoli, E. Spada, E. Martines, M. Bagatin, and J. Drake (2003). Anomalous particle transport and flow shear in the edge region of RFP's. *Journal of Nuclear Materials* **313–316 IS -**, 972–975.

18. V. Antoni, G. Regnoli, M. Spolaore, G. Serianni, N. Vianello, R. Cavazzana, E. Spada, and E. Martines (2003). Transport Due to Intermittent Events and Plasma Flow Shear in Magnetized Plasmas. *AIP Conf. Proc.* **669**(1), 191–194.
19. M. Puiatti, S. Cappello, R. Lorenzini, S. Martini, S. Ortolani, R. Paccagnella, F. Sattin, D. Terranova, T. Bolzonella, A. Buffa, A. Canton, L. Carraro, D. F. Escande, L. Garzotti, P. Innocente, L. Marrelli, E. Martines, P. Scarin, G. Spizzo, M. Valisa, P. Zanca, V. Antoni, L. Apolloni, M. Bagatin, W. Baker, O. Barana, D. Bettella, P. Bettini, R. Cavazzana, M. Cavinato, G. Chitarin, A. Cravotta, F. D'Angelo, S. D. Bello, A. D. Lorenzi, D. Desideri, P. Fiorentin, P. Franz, L. Frassinetti, E. Gaio, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, D. Marcuzzi, P. Martin, A. Masiello, F. Milani, M. Moresco, A. Murari, P. Nielsen, R. Pasqualotto, B. Pegourie, S. Peruzzo, R. Piovan, P. Piovesan, N. Pomaro, G. Preti, G. Regnoli, G. Rostagni, G. Serianni, P. Sonato, E. Spada, M. Spolaore, C. Taliercio, G. Telesca, V. Toigo, N. Vianello, P. Zaccaria, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2003). Analysis and modelling of the magnetic and plasma profiles during PPCD experiments in RFX. *Nucl. Fusion* **43**(10), 1057–1065.
20. V. Antoni, H. Bergs aker, R. Cavazzana, V. Carbone, J. Drake, E. Martines, G. Regnoli, G. Serianni, E. Spada, M. Spolaore, and N. Vianello (2004). Turbulence and Anomalous Transport in Magnetized Plasmas: Hints from the Reversed Field Pinch Configuration. *Contrib. Plasma Phys.* **44**(56), 458–464.
21. F. Sattin, N. Vianello, and M. Valisa (2004). On the probability distribution function of particle density at the edge of fusion devices. *Phys. Plasmas* **11**(11), 5032.
22. M. Spolaore, V. Antoni, E. Spada, H. Bergs aker, R. Cavazzana, J. Drake, E. Martines, G. Regnoli, G. Serianni, and N. Vianello (2004). Vortex-induced diffusivity in reversed field pinch plasmas. *Phys. Rev. Lett.* **93**(21), 215003.
23. V. Antoni, E. Spada, N. Vianello, M. Spolaore, R. Cavazzana, G. Serianni, and E. Martines (2005). Shear flows generated by plasma turbulence and their influence on transport. *Plasma Physics and Controlled Fusion* **47**(12B), B13–B23.
24. G. Regnoli, H. Bergs aker, E. Tennfors, F. Zonca, E. Martines, G. Serianni, M. Spolaore, N. Vianello, M. Cecconello, V. Antoni, R. Cavazzana, and J.-A. Malmberg (2005). Observations of toroidicity-induced Alfv en eigenmodes in a reversed field pinch plasma. *Phys. Plasmas* **12**(4), 042502.
25. F. Sattin and N. Vianello (2005). Statistical model for intermittent plasma edge turbulence. *Phys. Rev. E* **72**(1), 5.
26. F. Sattin, N. Vianello, M. Valisa, V. Antoni, and G. Serianni (2005). On the probability distribution function of particle density and flux at the edge of fusion devices. *J. Phys.: Conf. Ser.* **7**, 247–252.
27. M. Spolaore, V. Antoni, E. Spada, H. Bergs aker, R. Cavazzana, J. R. Drake, E. Martines, G. Regnoli, G. Serianni, and N. Vianello (2005). Coherent structure diffusivity in the edge region of Reversed Field Pinch experiments. *J. Phys.: Conf. Ser.* **7**, 253–258.
28. N. Vianello, V. Antoni, E. Spada, M. Spolaore, G. Serianni, R. Cavazzana, H. Bergs aker, M. Cecconello, and J. Drake (2005). Reynolds and Maxwell stress measurements in the reversed field pinch experiment Extrap-T2R. *Nucl. Fusion* **45**(8), 761–766.
29. N. Vianello, E. Spada, V. Antoni, M. Spolaore, G. Serianni, G. Regnoli, R. Cavazzana, H. Bergs aker, and J. R. Drake (2005). Self-Regulation of E×B Flow Shear via Plasma Turbulence. *Phys. Rev. Lett.* **94**(13), 135001.
30. V. Antoni, J. Drake, E. Spada, M. Spolaore, N. Vianello, H. Bergs aker, R. Cavazzana, M. Cecconello, E. Martines, and G. Serianni (2006). Coherent structures and anomalous transport in reversed field pinch plasmas. *Phys. Scr.* **T122**, 1–7.
31. R. Paccagnella, S. Ortolani, P. Zanca, A. Alfier, T. Bolzonella, L. Marrelli, M. E. Puiatti, G. Serianni, D. Terranova, M. Valisa, M. Agostini, L. Apolloni, F. Auriemma, F. Bonomo, A. Canton, L. Carraro, R. Cavazzana, M. Cavinato, P. Franz, E. Gazza, L. Grando, P. Innocente, R. Lorenzini, A. Luchetta, G. Manduchi, G. Marchiori, S. Martini, R. Pasqualotto, P. Piovesan, N. Pomaro, P. Scarin, G. Spizzo, M. Spolaore, C. Taliercio, N. Vianello, B. Zaniol, L. Zanutto, and M. Zuin (2006). Active-Feedback Control of the Magnetic Boundary for Magnetohydrodynamic Stabilization of a Fusion Plasma. *Phys. Rev. Lett.* **97**(7), 4.
32. F. Sattin, P. Scarin, M. Agostini, R. Cavazzana, G. Serianni, M. Spolaore, and N. Vianello (2006). Statistical features of edge turbulence in RFX-mod from gas puffing imaging. *Plasma Physics and Controlled Fusion* **48**(7), 1033–1051.
33. N. Vianello, V. Antoni, E. Spada, M. Spolaore, G. Serianni, R. Cavazzana, H. Bergs aker, M. Cecconello, and J. R. Drake (2006). Turbulence, flow and transport: hints from reversed field pinch. *Plasma Physics and Controlled Fusion* **48**(4), S193–S203.
34. R. Cavazzana, G. Serianni, P. Scarin, M. Agostini, N. Vianello, Y. Yagi, H. Koguchi, S. Kiyama, H. Sakakita, and Y. Hirano (2007). Investigation of plasma edge turbulence using a gas-puff imaging system in the reversed-field pinch device TPE-RX. *Plasma Physics and Controlled Fusion* **49**(2), 129–143.
35. L. Marrelli, P. Zanca, M. Valisa, G. Marchiori, A. Alfier, F. Bonomo, M. Gobbin, P. Piovesan, D. Terranova, M. Agostini, C. Alessi, V. Antoni, L. Apolloni, F. Auriemma, O. Barana, P. Bettini, T. Bolzonella, D. Bonfiglio, M. Brombin, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, G. Chitarin, S. D. Bello, A. D. Lorenzi, D. F. Escande, A. Fassina, P. Franz, G. Gadani, E. Gaio, E. Gazza, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, P. Innocente, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, D. Marcuzzi, P. Martin, S. Martini, E. Martines, A. Masiello,

- F. Milani, M. Moresco, A. Murari, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, A. Pizzimenti, N. Pomaro, I. Predebon, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, G. Spizzo, M. Spolaore, C. Taccon, C. Taliercio, V. Toigo, N. Vianello, P. Zaccaria, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2007). Magnetic self organization, MHD active control and confinement in RFX-mod. *Plasma Physics and Controlled Fusion* **49**(12B), B359–B369.
36. S. Martini, M. Agostini, C. Alessi, A. Alfier, V. Antoni, L. Apolloni, F. Auriemma, P. Bettini, T. Bolzonella, D. Bonfiglio, F. Bonomo, M. Brombin, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, G. Chitarin, A. Cravotta, S. D. Bello, A. D. Lorenzi, L. D. Pasqual, D. F. Escande, A. Fassina, P. Franz, G. Gadani, E. Gaio, L. Garzotti, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, S. Guo, P. Innocente, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, P. Martin, E. Martines, A. Masiello, F. Milani, M. Moresco, A. Murari, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, A. Pizzimenti, N. Pomaro, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, G. Spizzo, M. Spolaore, C. Taccon, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, N. Vianello, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2007). Active MHD control at high currents in RFX-mod. *Nucl. Fusion* **47**(8), 783–791.
37. P. Scarin, M. Agostini, R. Cavazzana, F. Sattin, G. Serianni, and N. Vianello (2007). Edge turbulence in RFX-mod virtual-shell discharges. *Journal of Nuclear Materials* **363–365**, 669.
38. G. Serianni, M. Agostini, V. Antoni, R. Cavazzana, E. Martines, F. Sattin, P. Scarin, E. Spada, M. Spolaore, N. Vianello, and M. Zuin (2007). Coherent structures and transport properties in magnetized plasmas. *Plasma Physics and Controlled Fusion* **49**(12B), B267–B280.
39. M. Valisa, T. Bolzonella, P. Buratti, L. Carraro, R. Cavazzana, S. D. Bello, P. Martin, R. Pasqualotto, J. Sarff, M. Spolaore, P. Zanca, L. Zanutto, M. Agostini, A. Alfier, V. Antoni, L. Apolloni, F. Auriemma, O. Barana, M. Baruzzo, P. Bettini, D. Bonfiglio, F. Bonomo, M. Brombin, A. Buffa, A. Canton, S. Cappello, M. Cavinato, G. Chitarin, A. D. Lorenzi, G. D. Masi, D. F. Escande, A. Fassina, P. Franz, E. Gaio, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, L. Guazzotto, S. Guo, V. Igochine, P. Innocente, R. Lorenzini, A. Luchetta, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, S. Martini, E. Martines, K. Mccollam, F. Milani, M. Moresco, L. Novello, S. Ortolani, R. Paccagnella, S. Peruzzo, R. Piovan, L. Piron, A. Pizzimenti, P. Piovesan, N. Pomaro, I. Predebon, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, S. Spagnolo, G. Spizzo, C. Taliercio, D. Terranova, V. Toigo, N. Vianello, D. Yadikin, P. Zaccaria, B. Zaniol, E. Zilli, and M. Zuin (2008). High current regimes in RFX-mod. *Plasma Physics and Controlled Fusion* **50**, 124031.
40. M. Agostini, P. Scarin, R. Cavazzana, F. Sattin, G. Serianni, M. Spolaore, and N. Vianello (2009). Edge turbulence characterization in RFX-mod with optical diagnostics. *Plasma Physics and Controlled Fusion* **51**, 105003.
41. J. Brotankova, J. Adamek, E. Martines, J. Stockel, M. Spolaore, R. Cavazzana, G. Serianni, N. Vianello, and M. Zuin (2009). Measurements of plasma potential and electron temperature by ball-pen probes in RFX-Mod. *Probl. At. Sci. Tech.* (1), 16–18.
42. C. Ionita, N. Vianello, H. W. Muller, F. Mehlmann, M. Zuin, V. Naulin, J. Rasmussen, V. Rohde, R. Cavazzana, C. Lupu, M. Maraschek, R. W. Schrittwieser, and P. C. Balan (2009). Simultaneous Measurements of Electrostatic and Magnetic Fluctuations in ASDEX Upgrade Edge Plasma. *J. Plasma Fusion Res. Series* **8**, 413.
43. F. Lepreti, V. Carbone, M. Spolaore, V. Antoni, R. Cavazzana, E. Martines, G. Serianni, P. Veltri, N. Vianello, and M. Zuin (2009). Yaglom law for electrostatic turbulence. *Europhys Lett* **86**, 25001.
44. R. Lorenzini, M. Agostini, A. Alfier, V. Antoni, L. Apolloni, F. Auriemma, O. Barana, M. Baruzzo, P. Bettini, D. Bonfiglio, T. Bolzonella, F. Bonomo, M. Brombin, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, G. Chitarin, S. Bello, A. D. Lorenzi, G. D. Masi, D. Escande, A. Fassina, P. Franz, E. Gaio, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, S. Guo, P. Innocente, A. Luchetta, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, P. Martin, S. Martini, E. Martines, F. Milani, M. Moresco, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, L. Piron, A. Pizzimenti, N. Pomaro, I. Predebon, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, S. Spagnolo, G. Spizzo, M. Spolaore, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, P. Veltri, N. Vianello, P. Zaccaria, B. Zaniol, L. Zanutto, E. Zilli, and M. Zuin (2009). Improvement of the magnetic configuration in the reversed field pinch through successive bifurcations. *Phys. Plasmas* **16**(5), 056109–6.
45. R. Lorenzini, E. Martines, P. Piovesan, D. Terranova, P. Zanca, M. Zuin, A. Alfier, D. Bonfiglio, F. Bonomo, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, D. Escande, A. Fassina, P. Franz, M. Gobbin, P. Innocente, L. Marrelli, R. Pasqualotto, M. Puiatti, M. Spolaore, M. Valisa, N. Vianello, and P. Martin (2009). Self-organized helical equilibria as a new paradigm for ohmically heated fusion plasmas. *Nat Phys* **5**, 570–754.
46. E. Martines, N. Vianello, D. Sundkvist, M. Spolaore, M. Zuin, M. Agostini, V. Antoni, R. Cavazzana, C. Ionita, M. Maraschek, F. Mehlmann, H. Müller, V. Naulin, J. Rasmussen, V. Rohde, P. Scarin, R. Schrittwieser, G. Serianni, and E. Spada (2009). Current filaments in turbulent magnetized plasmas. *Plasma Physics and Controlled Fusion* **51**, 124053.

47. P. Martin, L. Apolloni, M. Puiatti, J. Adamek, M. Agostini, A. Alfier, S. Annibaldi, V. Antoni, F. Auriemma, O. Barana, M. Baruzzo, P. Bettini, T. Bolzonella, D. Bonfiglio, F. Bonomo, M. Brombin, J. Brotankova, A. Buffa, P. Buratti, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, B. Chapman, G. Chitarin, S. D. Bello, A. D. Lorenzi, G. D. Masi, D. Escande, A. Fassina, A. Ferro, P. Franz, E. Gaio, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, L. Guazzotto, S. Guo, V. Igochine, P. Innocente, Y. Liu, R. Lorenzini, A. Luchetta, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, S. Martini, E. Martines, K. Mccollam, S. Menmuir, F. Milani, M. Moresco, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, L. Piron, A. Pizzimenti, N. Pomaro, I. Predebon, J. Reusch, G. Rostagni, G. Rubinacci, J. Sarff, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, S. Spagnolo, M. Spolaore, G. Spizzo, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, N. Vianello, F. Villone, R. B. White, D. Yadikin, P. Zaccaria, A. Zamengo, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, H. Zohm, and M. Zuin (2009). Overview of RFX-mod results. *Nucl. Fusion* **49**, 104019.
48. P. Piovesan, M. Zuin, A. Alfier, D. Bonfiglio, F. Bonomo, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, D. Escande, A. Fassina, M. Gobbin, R. Lorenzini, L. Marrelli, P. Martin, E. Martines, R. Pasqualotto, M. Puiatti, M. Spolaore, M. Valisa, N. Vianello, and P. Zanca (2009). Magnetic order and confinement improvement in high-current regimes of RFX-mod with MHD feedback control. *Nucl. Fusion* **49**, 085036.
49. M. Puiatti, A. Alfier, F. Auriemma, S. Cappello, L. Carraro, R. Cavazzana, S. D. Bello, A. Fassina, D. Escande, P. Franz, M. Gobbin, P. Innocente, R. Lorenzini, L. Marrelli, P. Martin, P. Piovesan, I. Predebon, F. Sattin, G. Spizzo, D. Terranova, M. Valisa, B. Zaniol, L. Zanutto, M. Zuin, M. Agostini, V. Antoni, L. Apolloni, M. Baruzzo, T. Bolzonella, D. Bonfiglio, F. Bonomo, A. Boozer, M. Brombin, A. Canton, R. Delogu, G. D. Masi, E. Gaio, E. Gazza, L. Giudicotti, L. Grando, S. Guo, G. Manduchi, G. Marchiori, E. Martines, S. Martini, S. Menmuir, B. Momo, M. Moresco, S. Munaretto, L. Novello, R. Paccagnella, R. Pasqualotto, R. Piovan, L. Piron, A. Pizzimenti, N. Pomphrey, P. Scarin, G. Serianni, E. Spada, A. Soppelsa, S. Spagnolo, M. Spolaore, C. Taliercio, N. Vianello, A. Zamengo, and P. Zanca (2009). Helical equilibria and magnetic structures in the reversed field pinch and analogies to the tokamak and stellarator. *Plasma Physics and Controlled Fusion* **51**, 124031.
50. F. Sattin, M. Agostini, R. Cavazzana, G. Serianni, P. Scarin, and N. Vianello (2009). About the parabolic relation existing between the skewness and the kurtosis in time series of experimental data. *Phys. Scr.* **79**, 045006.
51. F. Sattin, M. Agostini, P. Scarin, N. Vianello, R. Cavazzana, L. Marrelli, G. Serianni, S. J. Zweben, R. Maqueda, Y. Yagi, H. Sakakita, H. Koguchi, S. Kiyama, Y. Hirano, and J. Terry (2009). On the statistics of edge fluctuations: comparative study between various fusion devices. *Plasma Physics and Controlled Fusion* **51**, 055013.
52. P. Scarin, M. Agostini, R. Cavazzana, F. Sattin, G. Serianni, M. Spolaore, and N. Vianello (2009). Edge turbulence scaling in RFX-mod as measured using GPI diagnostic. *Journal of Nuclear Materials* **390-391**, 444–447.
53. M. Spolaore, N. Vianello, M. Agostini, R. Cavazzana, E. Martines, P. Scarin, G. Serianni, E. Spada, M. Zuin, and V. Antoni (2009). Direct Measurement of Current Filament Structures in a Magnetic-Confinement Fusion Device. *Phys. Rev. Lett.* **102**(16), 165001.
54. M. Spolaore, N. Vianello, M. Agostini, R. Cavazzana, E. Martines, G. Serianni, P. Scarin, E. Spada, M. Zuin, and V. Antoni (2009). Magnetic and electrostatic structures measured in the edge region of the RFX-mod experiment. *Journal of Nuclear Materials* **390-391 IS -**, 448–451.
55. N. Vianello, E. Martines, M. Agostini, A. Alfier, A. Canton, R. Cavazzana, G. D. Masi, A. Fassina, R. Lorenzini, P. Scarin, G. Serianni, S. Spagnolo, G. Spizzo, M. Spolaore, and M. Zuin (2009). Transport mechanisms in the outer region of RFX-mod. *Nucl. Fusion* **49**, 045008.
56. M. Zuin, N. Vianello, M. Spolaore, V. Antoni, T. Bolzonella, R. Cavazzana, E. Martines, G. Serianni, and D. Terranova (2009). Current sheets during spontaneous reconnection in a current-carrying fusion plasma. *Plasma Physics and Controlled Fusion* **51**, 035012.
57. G. D. Masi, M. Spolaore, R. Cavazzana, P. Innocente, R. Lorenzini, E. Martines, B. Momo, S. Munaretto, G. Serianni, S. Spagnolo, D. Terranova, N. Vianello, and M. Zuin (2010). Flow Measurements in the Edge Region of the RFX-Mod Experiment. *Contrib. Plasma Phys.* **50**(9), 824–829.
58. S. Menmuir, L. Carraro, A. Alfier, F. Bonomo, A. Fassina, G. Spizzo, and N. Vianello (2010). Impurity transport studies in RFX-mod multiple helicity and enhanced confinement QSH regimes. *Plasma Physics and Controlled Fusion* **52**(9), 095001.
59. R. Schrittwieser, C. Ionita, N. Vianello, H. Müller, F. Mehlmann, M. Zuin, V. Naulin, J. Rasmussen, V. Rohde, R. Cavazzana, C. Lupu, M. Maraschek, C. Maszl, and A. U. Team (2010). A Probe Head for Simultaneous Measurements of Electrostatic and Magnetic Fluctuations in ASDEX Upgrade Edge Plasma. *Contrib. Plasma Phys.* **50**(9), 860–865.
60. G. Spizzo, P. Scarin, M. Agostini, A. Alfier, F. Auriemma, D. Bonfiglio, S. Cappello, A. Fassina, P. Franz, L. Piron, P. Piovesan, M. Puiatti, M. Valisa, and N. Vianello (2010). Investigation on the relation between edge radial electric field asymmetries in RFX-mod and density limit. *Plasma Physics and Controlled Fusion* **52**(9), 095011.
61. D. Terranova, D. Bonfiglio, A. Boozer, A. Cooper, M. Gobbin, S. Hirshman, R. Lorenzini, L. Marrelli, E. Martines, B. Momo, N. Pomphrey, I. Predebon, R. Sanchez, G. Spizzo, M. Agostini, A. Alfier, L. Apolloni, F. Auriemma, M. Baruzzo,

- T. Bolzonella, F. Bonomo, M. Brombin, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, S. Bello, R. Delogu, G. D. Masi, M. Drevlak, A. Fassina, A. Ferro, P. Franz, E. Gaio, E. Gazza, L. Giudicotti, L. Grando, S. Guo, P. Innocente, D. López-Bruna, G. Manduchi, G. Marchiori, P. Martin, S. Martini, S. Menmuir, S. Munaretto, L. Novello, R. Paccagnella, R. Pasqualotto, G. Pereverzev, R. Piovan, P. Piovesan, L. Piron, M. Puiatti, M. Recchia, F. Sattin, P. Scarin, G. Serianni, A. Soppelsa, S. Spagnolo, M. Spolaore, C. Taliercio, M. Valisa, N. Vianello, Z. Wang, A. Zamengo, B. Zaniol, L. Zanutto, P. Zanca, and M. Zuin (2010). A 3D approach to equilibrium, stability and transport studies in RFX-mod improved regimes. *Plasma Physics and Controlled Fusion* 52, 124023.
62. N. Vianello, M. Spolaore, E. Martines, R. Cavazzana, G. Serianni, M. Zuin, E. Spada, and V. Antoni (2010). Drift-Alfvén vortex structures in the edge region of a fusion relevant plasma. *Nuclear Fusion* 50(4), 042002.
63. M. Zuin, S. Spagnolo, R. Paccagnella, E. Martines, R. Cavazzana, G. Serianni, M. Spolaore, and N. Vianello (2010). Resistive g-modes in a reversed-field pinch plasma. *Nuclear Fusion* 50(5), 052001.
64. I. Furno, M. Spolaore, C. Theiler, N. Vianello, R. Cavazzana, and A. Fasoli (June 2011). Direct Two-Dimensional Measurements of the Field-Aligned Current Associated with Plasma Blobs. *Physical Review Letters* 106(24), 245001.
65. I. Furno, C. Theiler, D. Lancon, A. Fasoli, D. Iraj, P. Ricci, M. Spolaore, and N. Vianello (2011). Blob current structures in TORPEX plasmas: experimental measurements and numerical simulations. *Plasma Physics and Controlled Fusion* 53(12), 124016.
66. A. Kallenbach, J. Adamek, L. Aho-Mantila, S. Äkäslompolo, C. Angioni, C. V. Atanasiu, M. Balden, K. Behler, E. Belonohy, A. Bergmann, M. Bernert, R. Bilato, V. Bobkov, J. Boom, A. Bottino, F. Braun, M. Brüdgam, A. Buhler, A. Burckhart, A. Chanin, I. G. J. Classen, G. D. Conway, D. P. Coster, P. de Marne, R. D'Inca, R. Drube, R. Dux, T. Eich, N. Endstrasser, K. Engelhardt, B. Esposito, E. Fable, H. U. Fahrback, L. Fattorini, R. Fischer, A. Flaws, H. Fünfgelder, J. C. Fuchs, K. Gál, M. G. Munoz, B. Geiger, M. G. Adamov, L. Giannone, C. Giroud, T. Görler, S. Da Graça, H. Greuner, O. Gruber, A. Gude, S. Günter, G. Haas, A. H. Hakola, D. Hangan, T. Happel, T. Hauff, B. Heinemann, A. Herrmann, N. Hicks, J. Hobirk, H. Höhnle, M. Hölzl, C. Hopf, L. Horton, M. Huart, V. Igochine, C. Ionita, A. Janzer, F. Jenko, C. P. Käsemann, S. Kalvin, O. Kardaun, M. Kaufmann, A. Kirk, H. J. Klingshirn, M. Kocan, G. Kocsis, H. Kolotzek, C. Konz, R. Koslowski, K. Krieger, T. Kurki-Suonio, B. Kurzan, K. Lackner, P. T. Lang, P. Lauber, M. Laux, F. Leipold, F. Leuterer, A. Lohs, N. C. Luhmann Jr, T. Lunt, A. Lysoivan, H. Maier, C. Maggi, K. Mank, M. E. Manso, M. Maraschek, P. Martin, M. Mayer, P. J. McCarthy, R. McDermott, H. Meister, L. Menchero, F. Meo, P. Merkel, R. Merkel, V. Mertens, F. Merz, A. Mlynec, F. Monaco, H. W. Muller, M. München, H. Murmann, G. Neu, R. Neu, B. Nold, J.-M. Noterdaeme, H. K. Park, G. Pautasso, G. Pereverzev, Y. Podoba, F. Pompon, E. Poli, K. Polochiy, S. Potzel, M. Precht, M. J. Püschel, T. Pütterich, S. K. Rathgeber, G. Raupp, M. Reich, B. Reiter, T. Ribeiro, R. Riedl, V. Rohde, J. Roth, M. Rott, F. Ryter, W. Sandmann, J. Santos, K. Sassenberg, P. Sauter, A. Scarabosio, G. Schall, K. Schmid, P. A. Schneider, W. Schneider, G. Schramm, R. Schrittwieser, J. Schweinzer, B. Scott, M. Sempf, F. Serra, M. Sertoli, M. Siccinio, A. Sigalov, A. Silva, A. C. C. Sips, F. Sommer, A. Stäbler, J. Stober, B. Streibl, E. Strumberger, K. Sugiyama, W. Suttrop, T. Szepesi, G. Tardini, C. Tichmann, D. Told, W. Treutterer, L. Urso, P. Varela, J. Vincente, N. Vianello, T. Vierle, E. Viezzer, C. Vorpahl, D. Wagner, A. Weller, R. Wenninger, B. Wieland, C. Wigger, M. Willensdorfer, M. Wischmeier, E. Wolfrum, E. Würsching, D. Yadikin, Q. Yu, I. Zammuto, D. Zasche, T. Zehetbauer, Y. Zhang, M. Zilker, and H. Zohm (2011). Overview of ASDEX Upgrade results. *Nuclear Fusion* 51(9), 094012.
67. P. Martin, J. Adamek, P. Agostinetti, M. Agostini, A. Alfier, C. Angioni, V. Antoni, L. Apolloni, F. Auriemma, O. Barana, S. Barison, M. Baruzzo, P. Bettini, M. Boldrin, T. Bolzonella, D. Bonfiglio, F. Bonomo, A. H. Boozer, M. Brombin, J. Brotankova, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, L. Chacon, G. Chitarin, W. A. Cooper, S. D. Bello, M. D. Palma, R. Delogu, A. de Lorenzi, G. de Masi, J. Q. Dong, M. Drevlak, D. F. Escande, F. Fantini, A. Fassina, F. Fellin, A. Ferro, S. Fiameni, A. Fiorentin, P. Franz, E. Gaio, X. Garbet, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, S. C. Guo, Y. Hirano, S. P. Hirshman, S. Ide, V. Igochine, Y. In, P. Innocente, S. Kiyama, S. F. Liu, Y. Q. Liu, D. L. Bruna, R. Lorenzini, A. Luchetta, G. Manduchi, D. K. Mansfield, G. Marchiori, D. Marcuzzi, L. Marrelli, S. Martini, G. Matsunaga, E. Martines, G. Mazzitelli, K. Mccollam, S. Menmuir, F. Milani, B. Momo, M. Moresco, S. Munaretto, L. Novello, M. Okabayashi, S. Ortolani, R. Paccagnella, R. Pasqualotto, M. Pavei, G. V. Perverezev, S. Peruzzo, R. Piovan, P. Piovesan, L. Piron, A. Pizzimenti, N. Pomaro, N. Pomphrey, I. Predebon, M. E. Puiatti, V. Rigato, A. Rizzolo, G. Rostagni, G. Rubinacci, A. Ruzzon, H. Sakakita, R. Sánchez, J. S. Sarff, F. Sattin, A. Scaggion, P. Scarin, W. Schneider, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, S. Spagnolo, M. Spolaore, D. A. Spong, G. Spizzo, M. Takechi, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, M. Veranda, N. Vianello, F. Vil-lone, Z. Wang, R. B. White, D. Yadikin, P. Zaccaria, A. Zamengo, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2011). Overview of the RFX fusion science program. *Nuclear Fusion* 51(9), 094023.
68. H. W. Muller, J. Adamek, R. Cavazzana, G. D. Conway, C. Fuchs, J. P. Gunn, A. Herrmann, J. Horacek, C. Ionita, A. Kallenbach, M. Kocan, M. Maraschek, C. Maszl, F. Mehlmann, B. Nold, M. Peterka, V. Rohde, J. Schweinzer, R. Schrittwieser, N. Vianello, E. Wolfrum, M. Zuin, and the ASDEX Upgrade Team (June 2011). Latest investigations on fluctuations, ELM filaments and turbulent transport in the SOL of ASDEX Upgrade. *Nuclear Fusion* 51(7), 073023.

69. V. Naulin, N. Vianello, R. Schrittwieser, H. W. Muller, P. Migliucci, M. Zuin, C. Ionita, C. Maszl, F. Mehlmann, J. J. Rasmussen, V. Rohde, R. Cavazzana, and M. Maraschek (Aug. 2011). Magnetic diagnostic of SOL-filaments generated by type I ELMs on JET and ASDEX Upgrade. *Journal of Nuclear Materials* **415**(1, Supplement), S869–S872.
70. M. E. Puiatti, M. Valisa, M. Agostini, F. Auriemma, F. Bonomo, L. Carraro, A. Fassina, M. Gobbin, R. Lorenzini, B. Momo, A. Scaggion, B. Zaniol, A. Alfier, L. Apolloni, M. Baruzzo, T. Bolzonella, D. Bonfiglio, A. Canton, S. Cappello, R. Cavazzana, S. D. Bello, G. de Masi, D. F. Escande, P. Franz, E. Gazza, S. Guo, P. Innocente, G. Marchiori, L. Marrelli, P. Martin, E. Martinez, S. Martini, S. Menmuir, L. Novello, R. Paccagnella, P. Piovesan, L. Piron, I. Predebon, A. Ruzzon, F. Sattin, P. Scarin, A. Soppelsa, G. Spizzo, S. Spagnolo, M. Spolaore, D. Terranova, M. Veranda, N. Vianello, P. Zanca, L. Zanotto, and M. Zuin (2011). Internal and external electron transport barriers in the RFX-mod reversed field pinch. *Nuclear Fusion* **51**(7), 073038.
71. F. Sattin, N. Vianello, R. Lorenzini, M. Gobbin, and F. Bonomo (2011). Modelling the temperature plateau in RFX-mod single-helical-axis (SHAX) states. *Plasma Physics and Controlled Fusion* **53**, 025013.
72. P. Scarin, N. Vianello, M. Agostini, G. Spizzo, M. Spolaore, M. Zuin, S. Cappello, L. Carraro, R. Cavazzana, G. de Masi, E. Martinez, M. Moresco, S. Munaretto, M. E. Puiatti, and M. Valisa (2011). Topology and transport in the edge region of RFX-mod helical regimes. *Nuclear Fusion* **51**(7), 073002.
73. S. Spagnolo, M. Zuin, F. Auriemma, R. Cavazzana, E. Martinez, M. Spolaore, and N. Vianello (2011). Alfvén eigenmodes in the RFX-mod reversed-field pinch plasma. *Nuclear Fusion* **51**(8), 083038.
74. M. Spolaore, G. de Masi, N. Vianello, M. Agostini, D. Bonfiglio, R. Cavazzana, R. Lorenzini, E. Martinez, B. Momo, P. Scarin, G. Serianni, S. Spagnolo, and M. Zuin (2011). Parallel and perpendicular flows in the RFX-mod edge region. *Journal of Nuclear Materials* **415**(1, Supplement), S437–S442.
75. N. Vianello, V. Naulin, R. Schrittwieser, H. W. Muller, M. Zuin, C. Ionita, J. J. Rasmussen, F. Mehlmann, V. Rohde, R. Cavazzana, and M. Maraschek (Mar. 2011). Direct Observation of Current in Type-I Edge-Localized-Mode Filaments on the ASDEX Upgrade Tokamak. *Physical Review Letters* **106**(12), 125002.
76. Y. Xu, D. Carralero, C. Hidalgo, S. Jachmich, P. Manz, E. Martinez, B. van Milligen, M. A. Pedrosa, M. Ramisch, I. Shesterikov, C. Silva, M. Spolaore, U. Stroth, and N. Vianello (2011). Long-range correlations and edge transport bifurcation in fusion plasmas. *Nuclear Fusion* **51**(6), 063020.
77. M. Agostini, A. Scaggion, P. Scarin, G. Spizzo, and N. Vianello (2012). Interplay between edge magnetic topology, pressure profile and blobs in the edge of RFX-mod. *Plasma Physics and Controlled Fusion* **54**(6), 065003.
78. G. Spizzo, M. Agostini, P. Scarin, N. Vianello, R. B. White, S. Cappello, M. E. Puiatti, M. Valisa, and the RFX-Mod Team (2012). Edge topology and flows in the reversed-field pinch. *Nuclear Fusion* **52**, 054015.

*

Papers in conference proceedings

1. V. Antoni, M. Valisa, L. Apolloni, M. Bagatin, W. Baker, O. Barana, R. Bartiromo, P. Bettini, A. Boboc, T. Bolzonella, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, G. Chitarin, S. Costa, F. D'Angelo, S. D. Bello, A. D. Lorenzi, D. Desideri, D. Escande, L. Fattorini, P. Fiorentin, P. Franz, E. Gaio, L. Garzotti, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, P. Innocente, A. Intravaia, R. Lorenzini, A. Lucchetta, G. Malesani, G. Manduchi, G. Marchiori, L. Marrelli, P. Martin, E. Martinez, S. Martini, A. Maschio, A. M. and F. Milani, M. Moresco, A. Murari, P. Nielsen, M. O'Gorman, S. Ortolani, R. Paccagnella, R. Pasqualotto, B. Pégurie, S. Peruzzo, R. Piovan, N. Pomaro, A. Panno, G. Preti, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, G. Spizzo, M. Spolaore, C. Taliercio, G. Telesca, D. Terranova, V. Toiogo, L. Tramontin, N. Vianello, M. Viterbo, L. Zabeo, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanotto, E. Zilli, and G. Zollino (2000). Transport Mechanisms and Enhanced Confinement Studies in RFX. In: *Proceedings of the 18th IAEA Fusion Energy Conference, Sorrento, Italia*. IAEA-F1-CN-77/EXP5/09.
2. P. Martin, S. Martini, V. Antoni, L. Apolloni, M. Bagatin, W. Baker, O. Barana, R. Bartiromo, P. Bettini, A. Boboc, T. Bolzonella, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, G. Chitarin, S. Costa, F. D'Angelo, S. D. Bello, A. D. Lorenzi, D. Desideri, D. Escande, L. Fattorini, P. Fiorentin, P. Franz, E. Gaio, L. Garzotti, L. Giudicotti, F. Gnesotto, L. Grando, S. Guo, P. Innocente, A. Intravaia, R. Lorenzini, A. Lucchetta, G. Malesani, G. Manduchi, G. Marchiori, L. Marrelli, P. Martin, E. Martinez, S. Martini, A. Maschio, A. M. and F. Milani, M. Moresco, A. Murari, P. Nielsen, M. O'Gorman, S. Ortolani, R. Paccagnella, R. Pasqualotto, B. Pégurie, S. Peruzzo, R. Piovan, N. Pomaro, A. Panno, G. Preti, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, G. Spizzo, M. Spolaore, C. Taliercio, G. Telesca, D. Terranova, V. Toiogo, L. Tramontin, N. Vianello, M. Viterbo, L. Zabeo, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanotto, E. Zilli, and G. Zollino (2000). New Insights into MHD Dynamics of Magnetically Confined Plasmas from Experiments in RFX. In: *Proceedings of the 18th IAEA Fusion Energy Conference, Sorrento, Italia*. IAEA-F1-CN-77/EX3/5.
3. L. Tramontin, V. Antoni, M. Bagatin, L. Carraro, R. Cavazzana, D. Desideri, A. D. Lorenzi, L. Garzotti, P. Innocente, R. Lorenzini, E. Martinez, R. Pasqualotto, G. Serianni, M. Spolaore, and N. Vianello (2000). Particle and Momentum

- Balance During Edge Biasing in RFX. In: *Proceedings 27th EPS Conference on Contr.Fusion and Plasma Phys., Budapest*. 24B. European Physical Society, pp.1368.
4. V. Antoni, V. Carbone, R. Cavazzana, L. Fattorini, E. Martines, G. Regnoli, G. Serianni, E. Spada, M. Spolaore, L. Tramontin, and N. Vianello (2001). Bursty fluctuation events in magnetically confined plasmas: avalanche-like SOC processes or MHD turbulence? In: *Proceedings 28th EPS Conference on Controlled Fusion and Plasma Physics, Madeira, Portugal*. Vol. 25A. P4.028. European Physical Society, pp.1573.
 5. H. Bergs aker, V. Antoni, P. Brunzell, J. Drake, G. S. and M. Spolaore, H. S  therblom, and N. Vianello (2001). Turbulence and plasma rotation in the edge region of EXTRAP-T2R. In: *Proceedings 28th EPS Conference on Controlled Fusion and Plasma Physics, Madeira, Portugal*. Vol. 25A. P4.098. European Physical Society, pp.1685.
 6. G. Serianni, V. Antoni, F. Paganucci, P. Rossetti, M. Spolaore, N. Vianello, M. Bagatin, and M. Andrenucci (2001). Electron temperature measurements in a magneto-plasma-dynamic thruster. In: *Proceedings of XXV International Conference on Phenomena in Ionised Gases, Nagoya, Giappone*. Vol. I. Nagoya University, pp.311.
 7. N. Vianello, G. Regnoli, V. Antoni, V. Carbone, E. Martines, G. Serianni, and P. Veltri (2001). Electrostatic turbulence intermittency driven by MHD relaxation phenomena in a RFP plasma. In: *Proceedings 28th EPS Conference on Controlled Fusion and Plasma Physics, Madeira, Portugal*. Vol. 25A. P4.099. European Physical Society.
 8. M. Spolaore, V. Antoni, H. Bergs aker, R. Cavazzana, J. Drake, E. Martines, G. Regnoli, G. Serianni, E. Spada, and N. Vianello (2002). Intermittent events and electrostatic structures in the edge region of reversed field pinch experiments. In: *Proceedings 29th EPS Conference on Controlled Fusion and Plasma Physics, Montreux, Svizzera*. European Physical Society, pp.O3.25.
 9. N. Vianello, V. Antoni, F. Paganucci, G. Serianni, M. Zuin, R. Cavazzana, M. Spolaore, P. Rossetti, M. Bagatin, and M. Andrenucci (2002). Electrostatic fluctuations in a magneto-plasma-dynamics (MPD) thruster. In: *Proceedings 29th EPS Conference on Controlled Fusion and Plasma Physics, Montreux, Svizzera*. European Physical Society, pp.P4.026.
 10. G. Regnoli, H. Bergs aker, E. Tennfors, F. Zonca, E. Martines, M. Spolaore, N. Vianello, G. Serianni, M. Cecconello, J.-A. Malmberg, and V. Antoni (2003). Observations of Toroidicity-Induced Alfv en Eigenmodes (TAE) in a RFP Plasma. In: *Proceedings 30th EPS Conference on Contr. Fusion and Plasma Phys., St. Petersburg*. 27A. European Physical Society, pp.P-2.167.
 11. M. Spolaore, V. Antoni, H. Bergs aker, R. Cavazzana, J. Drake, E. Martines, G. Regnoli, G. Serianni, E. Spada, and N. Vianello (2003). Features of Electrostatic Structures in Reversed Field Pinch Edge Region. In: *Proceedings 30th EPS Conference on Contr. Fusion and Plasma Phys. St. Petersburg*. 27A. European Physical Society, pp.P-2.158.
 12. G. Regnoli, N. Vianello, Y. Yagi, E. Martines, G. Serianni, V. Antoni, and H. Ji (2004). Fast Electrons and Intermittent Events in the RFP Device TPE-1RM20. In: *Proceedings 31st EPS Conference on Plasma Phys., London*. 28B. European Physical Society, pp.P-2.109.
 13. N. Vianello, E. Spada, V. Antoni, M. Spolaore, G. Serianni, G. Regnoli, R. Cavazzana, E. Martines, H. Begsaker, and J. R. Drake (2004). Turbulence and Plasma Flow Self-Organisation in a Reversed Field Pinch Configuration. In: *Proceedings 31st EPS Conference on Plasma Phys., London*. 28B. European Physical Society, pp.P-2.110.
 14. T. Bolzonella, D. Terranova, P. Zanca, M. Zuin, R. Cavazzana, L. Grando, E. Martines, N. Pomaro, G. Serianni, and N. Vianello (2005). Overview of global MHD behaviour in the RFX-mod Reversed Field Pinch. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P-1.107.
 15. R. Cavazzana, P. Scarin, G. Serianni, M. Agostini, and N. Vianello (2005). Optical Investigation of Edge Turbulence on RFX-mod. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P-1.073.
 16. E. Martines, V. Antoni, T. Bolzonella, R. Cavazzana, N. Pomaro, G. Regnoli, G. Serianni, M. Spolaore, N. Vianello, and M. Zuin (2005). High frequency magnetic field fluctuations measured on the RFX-mod experiment with internal coils. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P-4.028.
 17. G. Serianni, M. Spolaore, N. Vianello, R. Cavazzana, E. Martines, N. Pomaro, M. Zuin, M. Agostini, M. Bagatin, and V. Antoni (2005). Electrostatic turbulence in the edge region of RFX-mod. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P-4.030.
 18. S. Martini, P. Innocente, M. Agostini, A. Alfier, V. Antoni, L. Apolloni, F. Auriemma, M. Bagatin, W. Baker, O. Barana, F. Basso, P. Bettini, T. Bolzonella, D. Bonfiglio, F. Bonomo, A. Buff a, A. Canton, S. Cappello, L. C. R. Cavazzana, M. Cavinato, G. Chitarin, A. Cravotta, F. S. D. Bello, M. D. Palma, A. D. Lorenzi, L. D. Pasqual, D. Desideri, D. Escande, P. Franz, G. Gadani, E. Gaio, L. Garzotti, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, S. Guo, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, P. Martin, E. Martines, S. Martini, A. Masiello, F. Milani, M. Moresco, A. Murari, P. Nielsen, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, I. Predebon, N. Pomaro, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, V. Schmidt, G. Serianni, P. Sonato, E. Spada, G. Spizzo, M. Spolaore, C. Taccon, C. Tali ercio, D. Terranova, V. Toigo, M. Valisa, N. Vianello, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2005). First results on the Reversed Field

- Pinch plasmas with new magnetic boundary. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P–5.054.
19. Y. Yagi, H. Koguchi, S. Kiyama, H. Sakakita, Y. Hirano, R. Cavazzana, P. Scarin, G. Serianni, M. Agostini, N. Vianello, and V. Antoni (2005). First results of the Gas Puffing Imaging Diagnostic in a reversed-field pinch plasma. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Tarragona 2005*. Vol. 29C. European Physical Society, pp.P–1.046.
 20. S. Martini, M. Agostini, C. Alessi, A. Alfier, V. Antoni, L. Apolloni, F. Auriemma, P. Bettini, T. Bolzonella, D. Bonfiglio, F. Bonomo, M. Brombin, A. Buffa, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, G. Chitarin, A. Cravotta, S. D. Bello, A. D. Lorenzi, L. D. Pasqual, D. F. Escande, A. Fassina, P. Franz, G. Gadani, E. Gaio, L. Garzotti, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, S. Guo, P. Innocente, R. Lorenzini, A. Luchetta, G. Malesani, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, P. Martin, E. Martines, A. Masiello, F. Milani, M. Moresco, A. Murari, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, A. Pizzimenti, N. Pomaro, M. Puiatti, G. Rostagni, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, G. Spizzo, M. Spolaore, C. Taccon, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, N. Vianello, P. Zaccaria, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, G. Zollino, and M. Zuin (2006). Overview of RFX-mod results with active MHD control. In: *Proceedings 21st IAEA Fusion Energy Conference, Chendu, China*, pp.EX/7–3.
 21. F. Sattin, P. Scarin, M. Agostini, R. Cavazzana, G. Serianni, M. Valisa, N. Vianello, Y. Yagi, H. Koguchi, S. Kyiama, H. Sakakita, and Y. Hirano (2006). Statistical features of edge turbulence in the TPE-RX and RFX-mod from gas puffing imaging. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Rome 2006*. Vol. 29C, pp.P–5.093.
 22. M. Spolaore, N. Vianello, R. Cavazzana, E. Martines, G. Serianni, E. Spada, M. Zuin, P. Scarin, M. Agostini, and V. Antoni (2006). Electrostatic and magnetic structure in the edge region of RFX-mod experiment. In: *Proceedings 33th EPS Conference on Controlled Fusion and Plasma Physics, Roma, Iqitalia*. Vol. 30I. Eurpean Physical Society, pp.P5.097.
 23. N. Vianello, E. Spada, R. Cavazzana, E. Martines, G. Serianni, M. Spolaore, M. Zuin, and V. Antoni (2006). Turbulent energy transfer in the RFX-Mod device. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Rome 2006*. Vol. 29C. European Physical Society, pp.P–5.085.
 24. M. Zuin, E. Martines, G. Serianni, T. Bolzonella, R. Cavazzana, N. Vianello, M. Spolaore, and V. Antoni (2006). Investigation of high frequency magnetic fluctuations in the RFX-mod device. In: *Proceedings 32th EPS Conference in Plasma Physics Contr. Fusion, Rome 2006*. Vol. 29C, pp.P–5.091.
 25. M. Agostini, R. Cavazzana, F. Sattin, P. Scarin, G. Serianni, M. Spolaore, and N. Vianello (2007). Characterisation of 2-dimensional edge turbulence of RFX-mod experiment. In: *Proceedings 34th EPS Conference on Controlled Fusion and Plasma Physics, Varsavia, Polonia*. Vol. 31F, pp.P2.044.
 26. M. Zuin, N. Vianello, M. Spolaore, T. Bolzonella, R. Cavazzana, E. Martines, D. Terranova, G. Serianni, E. Spada, and V. Antoni (2007). Fast dynamics of relaxation event in RFX-mod device. In: *Proceedings 34th EPS Conference on Controlled Fusion and Plasma Physics, Varsavia, Polonia*. Vol. 31F, pp.P1.118.
 27. E. Martines, A. Alfier, M. Agostini, A. Canton, R. Cavazzana, G. D. Masi, A. Fassina, P. Innocente, R. Lorenzini, P. Scarin, G. Serianni, M. Spolaore, D. Terranova, N. Vianello, and M. Zuin (2008). Transport Mechanisms in the Outer Region of RFX-mod. In: *Proceedings 22nd IAEA Fusion Energy Conference, Geneva, Switzerland*, pp.EX/P5–26.
 28. P. Martin, L. Apolloni, M. Puiatti, J. Adamek, M. Agostini, A. Alfier, S. Annibaldi, V. Antoni, F. Auriemma, O. Barana, M. Baruzzo, P. Bettini, T. Bolzonella, D. Bonfiglio, F. Bonomo, M. Brombin, J. Brotankova, A. Buffa, P. Buratti, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Cavinato, B. Chapman, G. Chitarin, S. D. Bello, A. D. Lorenzi, G. D. Masi, D. Escande, A. Fassina, A. Ferro, P. Franz, E. Gaio, E. Gazza, L. Giudicotti, F. Gnesotto, M. Gobbin, L. Grando, L. Guazzotto, S. Guo, V. Igochine, P. Innocente, Y. Liu, R. Lorenzini, A. Luchetta, G. Manduchi, G. Marchiori, D. Marcuzzi, L. Marrelli, S. Martini, E. Martines, K. Mccollam, S. Menmuir, F. Milani, M. Moresco, L. Novello, S. Ortolani, R. Paccagnella, R. Pasqualotto, S. Peruzzo, R. Piovan, P. Piovesan, L. Piron, A. Pizzimenti, N. Pomaro, I. Predebon, J. Reusch, G. Rostagni, G. Rubinacci, J. Sarff, F. Sattin, P. Scarin, G. Serianni, P. Sonato, E. Spada, A. Soppelsa, S. Spagnolo, M. Spolaore, G. Spizzo, C. Taliercio, D. Terranova, V. Toigo, M. Valisa, N. Vianello, F. Villone, R. White, D. Yadikin, P. Zaccaria, A. Zamengo, P. Zanca, B. Zaniol, L. Zanutto, E. Zilli, H. Zohm, and M. Zuin (2008). Overview of RFX-mod results. In: *Proceedings 22nd IAEA Fusion Energy Conference, Geneva, Switzerland*, pp.OV/5–2Ra.
 29. P. Piovesan, M. Zuin, A. Alfier, D. Bonfiglio, F. Bonomo, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, M. Gobbin, L. Marrelli, E. Martines, R. Lorenzini, R. Pasqualotto, M. Spolaore, M. Valisa, N. Vianello, and P. Zanca (2008). Magnetic order improvement through high current and MHD feedback control in RFX-mod. In: *Proceedings 35th EPS Conference on Controlled Fusion and Plasma Physics, Hersonissos, Greece*. Vol. 32D, pp.O4.029.
 30. N. Vianello, M. Agostini, A. Fassina, A. Canton, R. Lorenzini, A. Alfier, R. Cavazzana, E. Martines, P. Scarin, G. Serianni, G. Spizzo, M. Spolaore, and M. Zuin (2008). Turbulence, transport and their relation with the magnetic boundary in the RFX-mod device. In: *Proceedings 35th EPS Conference on Controlled Fusion and Plasma Physics, Hersonissos, Greece*. Vol. 32D, pp.O4.049.

31. M. Agostini, P. Scarin, A. Alfier, F. Auriemma, F. Bonomo, R. Cavazzana, V. Cervaro, A. Fassina, M. Gobbin, M. Puiatti, G. Serianni, G. Spizzo, M. Spolaore, and N. Vianello (2009). Plasma edge properties in different magnetic topologies in the RFX-mod device. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.P2.179.
32. G. Spizzo, P. Scarin, M. Agostini, A. Alfier, F. Auriemma, S. Cappello, A. Fassina, P. Franz, R. Lorenzini, R. Paccagnella, L. Piron, P. Piovesan, I. Predebon, M. Puiatti, M. Valisa, N. Vianello, and M. Zuin (2009). Investigation on the relation between edge electric radial field asymmetries in RFX-mod and Greenwald limit. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.O2.003.
33. M. Spolaore, G. D. Masi, N. Vianello, M. Agostini, R. Cavazzana, R. Lorenzini, E. Martines, B. Momo, P. Scarin, G. Serianni, S. Spagnolo, and M. Zuin (2009). Parallel and perpendicular flow measurements in the edge region of RFX-mod. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.P2.186.
34. N. Vianello, R. Schrittwieser, V. Naulin, H. Müller, M. Zuin, C. Ionita, F. Mehlmann, J. Rasmussen, V. Rohde, R. Cavazzana, M. Maraschek, C. Lupu, and the ASDEX Upgrade team 4 (2009). Local electromagnetic characterization of type I ELMS on ASDEX Upgrade. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.P-1.166.
35. N. Vianello, M. Spolaore, E. Martines, M. Agostini, R. Cavazzana, P. Scarin, G. Serianni, E. Spada, and M. Zuin (2009). Current filament structures in the edge region of the RFX-mod device. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.P2.187.
36. L. Zanotto, R. Cavazzana, S. D. Bello, P. Franz, R. Lorenzini, G. Marchiori, F. Milani, G. Spizzo, M. Spolaore, D. Terranova, N. Vianello, A. Alfier, P. Piovesan, and the RFX-mod team (2009). Optimization of the RFX-Mod performance at high current. In: *Proceedings 36th EPS Conference on Plasma Physics, Sofia, Bulgaria*. Vol. 33E, pp.P2.188.
37. F. Mehlmann, C. Ionita, V. Naulin, J. Rasmussen, H. Müller, N. Vianello, C. Maszl, V. Rohde, M. Zuin, R. Cavazzana, M. Maraschek, R. Schrittwieser, and A. U. Team (2010). Transport of momentum in the SOL of Asdex Upgrade. In: *Proceedings 37st EPS Conference on Plasma Phys., Dublin*, pp.P1.1064.
38. H. Müller, J. Adamek, R. Cavazzana, G. Conway, J. Gunn, A. Herrmann, J. Horacek, C. ionita, M. Kocan, M. Maraschek, C. Maszl, F. Mehlmann, B. Nold, M. Peterka, V. Rohde, R. Schrittwieser, N. Vianello, E. Wolfrum, M. Zuin, and the ASDEX Upgrade Team (2010). Fluctuations, ELM Filaments and Turbulent Transport in the SOL at the Outer Midplane of ASDEX Upgrade. In: *Proceedings 23nd IAEA Fusion Energy Conference, Daejeon, Korea Rep. of. EXD/P3-23*.
39. V. Naulin, N. Vianello, R. Schrittwieser, H. Müller, P. Migliucci, M. Zuin, C. Ionita, C. Maszl, F. Mehlmann, J. Rasmussen, V. Rohde, R. Cavazzana, and M. Maraschek (May 2010). Magnetic diagnostic of SOL-filaments generated by type I ELMS on JET and ASDEX Upgrade. In: *Proceedings of the 19th International Conference on Plasma Surface Interaction*.
40. M. Puiatti, M. Valisa, A. Alfier, M. Agostini, L. Apolloni, F. Auriemma, M. Baruzzo, T. Bolzonella, D. Bonfiglio, F. Bonomo, A. Canton, S. Cappello, L. Carraro, R. Cavazzana, S. D. Bello, G. D. Masi, D. Escande, A. Fassina, P. Franz, E. Gazza, M. Gobbin, S. Guo, P. Innocente, R. Lorenzini, G. Marchiori, L. Marrelli, P. Martin, E. Martines, S. Martini, S. Menmuir, B. Momo, L. Novello, R. Paccagnella, P. Piovesan, L. Piron, I. Predebon, A. Ruzzon, F. Sattin, A. Scaggion, P. Scarin, A. Soppelsa, G. Spizzo, S. Spagnolo, M. Spolaore, D. Terranova, M. Veranda, N. Vianello, P. Zanca, B. Zaniol, L. Zanotto, and M. Zuin (2010). Internal and edge electron transport barriers in the RFX-mod Reversed Field Pinch. In: *Proceedings 23nd IAEA Fusion Energy Conference, Daejeon, Korea Rep. of. EXC/P4-10*.
41. P. Scarin, M. Agostini, A. Alfier, L. Carraro, R. Cavazzana, V. Cervaro, A. Fassina, S. Munaretto, F. Sattin, G. Serianni, G. Spizzo, M. Spolaore, and N. Vianello (May 2010). Plasma Pressure Gradient in the Edge of RFX-mode Helical Regimes Plasma Pressure Gradient in the Edge of RFX-mode Helical Regimes Plasma Pressure Gradient in the Edge of RFX-mode helical regimees. In: *Proceedings of the 19th International Conference on Plasma Surface Interaction*.
42. P. Scarin, N. Vianello, M. Agostini, S. Cappello, L. Carraro, R. Cavazzana, G. D. Masi, E. Martines, M. Moresco, S. Munaretto, M. Puiatti, G. Spizzo, M. Spolaore, M. Valisa, M. Zuin, and the RFX-mod team (2010). Magnetic Structures and Pressure Profiles in the Plasma Boundary of RFX-mod: High Current and Density Limit in Helical Regimes Magnetic structures and pressure profiles in the plasma boundary of RFX-mod: High Current and Density Limit in Helical Regimes. In: *Proceedings 23nd IAEA Fusion Energy Conference, Daejeon, Korea Rep. of. EX/P3-29*.
43. S. Spagnolo, M. Zuin, R. Cavazzana, G. D. Masi, E. Martines, M. Spolaore, and N. Vianello (2010). Alfvén Eigenmodes in the RFX-mod reversed field pinch plasma. In: *Proceedings 37st EPS Conference on Plasma Phys., Dublin*, pp.P4.162.
44. M. Spolaore, G. D. Masi, N. Vianello, M. Agostini, D. Bonfiglio, R. Cavazzana, R. Lorenzini, E. Martines, B. Momo, P. Scarin, G. Serianni, S. Spagnolo, and M. Zuin (May 2010). Parallel and perpendicular flows in the RFX-mod edge region. In: *Proceedings of the 19th International Conference on Plasma Surface Interaction*. P2-71.
45. Y. Xu, N. Vianello, M. Spolaore, E. Martines, P. Manz, U. Stroth, C. Silva, M. Pedrosa, C. Hidalgo, D. Carralero, S. Jachmich, B. van Milligen, M. Ramisch, and I. Shesterikov (2010). Long-Range Correlations and Edge Transport Bi-

- furcation in Fusion Plasmas. In: *Proceedings 23rd IAEA Fusion Energy Conference, Daejeon, Korea Rep. of*. Ed. by IAEA. EXC/9-3.
46. L. Zanotto, R. Cavazzana, R. Lorenzini, L. Novello, M. Zuin, S. D. Bello, P. Franz, G. Marchiori, P. Piovesan, D. Terranova, G. Spizzo, M. Spolaore, N. Vianello, and the RFX-mod team (2010). Optimisation of the RFX-mod experiment for 2MA operation. In: *Proceedings 37th EPS Conference on Plasma Phys., Dublin*, pp.P2.193.
 47. A. Fasoli, A. Bovet, I. Furno, K. Gustafson, D. Iraj, B. Labit, D. Lancon, J. Loizu, P. Ricci, C. Theiler, M. Spolaore, N. Vianello, and R. Cavazzana (2011). Overview of Turbulence and Transport Studies in the TORPEX Simple Magnetized Plasmas. In: *Proceedings 38th EPS Conference on Plasma Physics, Strasbourg, France*. Strasbourg, pp.P1.003.
 48. A. Scaggion, M. Agostini, L. Carraro, A. Fassina, R. Lorenzini, B. Momo, S. Munaretto, M. E. Puiatti, G. Spizzo, M. Valisa, and N. Vianello (2011). Characterization of external electron temperature profiles in the RFX-mod Reversed Field Pinch. In: *Proceedings 38th EPS Conference on Plasma Physics, Strasbourg, France*. Strasbourg, pp.P5.059.
 49. M. Spolaore, M. Agostini, D. Bonfiglio, F. Bonomo, S. Cappello, L. Carraro, G. de Masi, D. F. Escande, M. Gobbin, P. Innocente, L. Marrelli, E. Martinez, B. Momo, P. Piovesan, P. Scarin, G. Spizzo, N. Vianello, and B. Zaniol (2011). Helical flow in the RFX-mod Reversed Field Pinch experiment. In: *Proceedings 38th EPS Conference on Plasma Physics, Strasbourg, France*. Strasbourg, pp.P5.081.
 50. M. Zuin, S. Spagnolo, F. Auriemma, R. Cavazzana, G. de Masi, B. Momo, E. Martinez, P. Scarin, W. Schneider, M. Spolaore, and N. Vianello (2011). Alfvén Eigenmodes and Magnetic reconnection in the RFX-mod reversed-field pinch plasma. In: *Proceedings 38th EPS Conference on Plasma Physics, Strasbourg, France*, pp.P5.135.

*

First author oral contributions

1. N. Vianello, V. Antoni, V. Carbone, R. Bergsaker H and Cavazzana, E. Martinez, G. Regnoli, G. Serianni, E. Spada, and M. Spolaore (2002). *Intermittency and fluctuations in edge plasma turbulence*. presented at 7th Easter Plasma Meeting, Turin, Italy.
2. N. Vianello, V. Antoni, E. Spada, M. Spolaore, G. Serianni, G. Regnoli, M. Zuin, R. Cavazzana, H. Bersaker, M. Cecconello, and J. R. Drake (2004). *Sheared $E \times B$ flow and plasma turbulence viscosity in a Reversed Field Pinch*. presented at the 46th APS DPP Conference, Savannah, GA, USA.
3. N. Vianello, E. Spada, V. Antoni, H. Bersaker, M. Spolaore, G. Serianni, G. Regnoli, R. Cavazzana, and J. R. Drake (2004). *Dynamical self-organisation process between turbulence and plasma flow in a Reversed Field Pinch configuration*. presented at the 10th EU-US Transport Task Force Workshop, Varenna, Italy.
4. N. Vianello, E. Spada, V. Antoni, M. Spolaore, G. Serianni, G. Regnoli, H. Bergsaker, and J. R. Drake (2004). *Fluctuations and velocity profile self regulation in a Reversed Field Pinch Plasma*. presented at th 10th IEA/RFP Workshop, Padova, Italy.
5. N. Vianello, M. Agostini, R. Cavazzana, G. Serianni, and P. Scarin (2005). *Experimental characterization of edge turbulence with GPID in RFX-mod*. presented at the 11th IEA/RFP Workshop, Madison, USA.
6. N. Vianello, V. Antoni, E. Spada, H. Bersaker, M. Spolaore, R. Cavazzana, G. Serianni, M. Cecconello, and J. R. Drake (2005). *Turbulent energy transfer in electromagnetic turbulence: hints from a Reversed Field Pinch plasma*. presented at the 8th International Workshop on the Interrelationship between Plasma Experiments in Laboratory and Space, Tromsø, Norway.
7. N. Vianello, V. Antoni, E. Spada, M. Spolaore, R. Cavazzana, G. Serianni, H. Bersaker, M. Cecconello, and J. R. Drake (2005). *Turbulent self regulation process in the edge region of an RFP plasma*. presented at the 11th IEA/RFP Workshop, Madison, USA.
8. N. Vianello, E. Spada, E. Cavazzana, E. Martinez, G. Serianni, M. Spolaore, M. Zuin, and V. Antoni (2007). *Energy balance including turbulence effects in Reversed Field Pinch plasmas*. presented at the 12th EU-US TTF Workshop, San Diego, USA.
9. N. Vianello, M. Agostini, A. Fassina, A. Canton, R. Lorenzini, A. Alfier, R. Cavazzana, E. Martinez, P. Scarin, G. Serianni, G. Spizzo, M. Spolaore, and M. Zuin (2008). *Turbulence, transport and their relation with the magnetic boundary in the RFX-mod device*. presented at the 35th EPS Conference, Hersonissos, Greece.
10. N. Vianello, M. Spolaore, M. Agostini, R. Cavazzana, E. Martinez, P. Scarin, G. Serianni, E. Spada, M. Zuin, and V. Antoni (2008). *Current filaments and electrostatic structures measured in the edge region of the RFX-mod experiment*. presented at the 13rd IEA/RFP Workshop, Stockholm, Sweden.
11. N. Vianello, M. Spolaore, M. Agostini, R. Cavazzana, E. Martinez, P. Scarin, G. Serianni, E. Spada, M. Zuin, and V. Antoni (2008). *Magnetic and electrostatic structures measured in the edge region of the RFX-mod experiment*. presented at the EFTSOMP2008, Hersonissos, Greece.

12. N. Vianello, V. Naulin, R. Schrittwieser, H. W. Müller, M. Zuin, C. Ionita, F. Mehlmann, J. J. Rasmussen, V. Rhode, R. Cavazzana, M. Marashek, C. Maszl, and A. Scaggion (2009). *Characterization of type I ELMs on ASDEX Upgrade using magnetic signals*. presented at the 2nd EFDA TTG Workshop, Culham, UK.
13. N. Vianello, M. Spolaore, E. Martines, M. Agostini, R. Cavazzana, P. Scarin, G. Serianni, E. Spada, and M. Zuin (2009). *Current filaments structures in the edge region of the RFX-mod device*. presented at the 2nd EFDA TTG Workshop, Culham, UK.
14. N. Vianello, M. Spolaore, E. Martines, R. Cavazzana, G. Serianni, E. Spada, and M. Zuin (2009). *Current filaments detected in the edge region of a magnetically confined plasmas*. presented at the Workshop on the Cross-scale coupling in Plasmas, Cosenza, Italy.
15. N. Vianello, M. Agostini, R. Cavazzana, G. De Masi, E. Martines, P. Scarin, G. Spizzo, M. Spolaore, and M. Zuin (2011). *Plasma boundary in RFX-mod: topology, flow and transport*. presented at 15th IEA/RFP Workshop, Madison.

*

Technical reports and Deliverables

1. N. Vianello (2011). *Notes on energetic ions and beam plasma interaction*. Task deliverable T6.2/D12.1-Beam Plasma Interaction. Grant F4E-2009-GRT-032 (PMS-H.CD)-Components and infrastructure of PRIMA.

Referees

Prof. Jens Juul Rasmussen

Risø National Laboratory for Sustainable Energy
& Department of Physics, Technical University of Denmark
Frederiksborgvej 399, Roskilde, Denmark
jjra@fysik.dtu.dk

Dr. Volker Naulin

EFDA Transport Topical Group Vice Chair
Risø National Laboratory for Sustainable Energy
& Department of Physics, Technical University of Denmark
Frederiksborgvej 399, Roskilde, Denmark
vona@fysik.dtu.dk

Prof. Ambrogio Fasoli

Executive director of Centre de Recherches en Physique des Plasmas
Ecole Polytechnique Federal de Lausanne
EPFL SB CRPP CRPP-TCV, PPB 318 (Batiment PPB), Station 13, CH-1015, Lausanne, Switzerland
ambrogio.fasoli@epfl.ch

Prof. Jim Drake

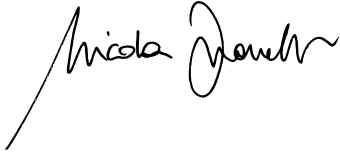
Department of Fusion Plasma Physics, School of Electrical Engineering, Royal Institute of Technology
Teknikringen 31, SE 100 44 Stockholm, Sweden
jim.drake@ee.kth.se

Dr. Vanni Antoni

Director of Istituto Gas Ionizzati
Consiglio Nazionale delle Ricerche
Corso Stati Uniti 4, 3527 Padova, Italy

vanni.antoni@igi.cnr.it

I hereby declare that the above information are true and correct to the best of my knowledge and belief and in the event of any information being found false or incorrect, my candidature will be liable to be canceled.

A handwritten signature in black ink, appearing to read 'Nicola Vianello', with a long, sweeping horizontal stroke extending to the left.

Nicola Vianello
Padova, Tuesday 5th June, 2012