

Curriculum Vitae with List of Publications

Alessandro Fiasconaro

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Known Languages: Italian, English, Spanish, French, (Polish, German)

Actual work address:

Universidad de Zaragoza
Dpto. de Física de la Materia Condensada
Escuela de Ingeniería y Arquitectura
C/ María de Luna, 3 - Edif. L. Torres Quevedo
E-50018 Zaragoza, Spain



Research Lines and Summary:

Stochastic effects in nonlinear systems and population dynamics: Stochastic Resonance, Resonant Activation, Noise Enhanced Stability, Noise induced order in Lotka-Volterra systems. Stability analysis in metastable potentials.

Biophysical Modelling: cancer dynamics, kinesin motion in microtubule, particle flux directionality in cell membranes. Active Brownian motion in ratchets. Models of molecular motors.

Single Molecule Biophysics: Polymer translocation, Mesoscopic models of dynamical properties of DNA (stretching, melting, unzipping, translocation). Microscopic simulation of stretching and unfolding of G-quadruplexes.

Complex networks: Phase and amplitude synchronization of oscillators. Personalized Recommendation systems. Characterization of City Growth.

Publications in international journals: **55** (ISI); **2** (No-ISI); **5** (ISI proceedings); **2** (No-ISI proceedings);

Publications in Q1: **29** en *T1:* **31**

H-index: **21** (ISI-Thomson); **23** (Google Scholar).

Citations: **1820** (ISI-Thomson). **2280** (Google Scholar).

5 years average of citation/year: **141** (ISI-Thomson metrics).

Book chapters: **1** – Books for students of Statistics: **2**

Recognized 6-years periods of research activity (sexenios de investigación): **3**.

PhD Thesis Directed: **1** (+ 1 in preparation)

Master Degree Thesis: **1**

Final Degree Work: **4**

Contribution at conferences:

9 Invited Talks

9 Regular Talks

5 co-author of invited

28 Posters

7 Proceedings

Seminars at research centres and Departments: 18

Research visits: 11 (9 universities)

Participation in research projects: 19

Scientific Collaborations with the universities of Palermo (IT), Cracow (PL), Berlin (DE), Barcelona (ES), Zaragoza (ES), Glasgow (UK), London (UK), Vienna (AU)

Titles

- Degree in Physics at University of Palermo. Title of the defended thesis: *Rappresentazione Q e conteggio doppio* (Q-representation and double counting [of photons]). Date of degree: 12.07.1996.
- PhD in Physics at the Dipartimento di Fisica e Astronomia of University of Catania. Title of the thesis: *The Equation of State of Nuclear Matter*. Date 24.01.2002. TOPIC: *Ab initio calculation of the equation of state of strongly interacting nuclear matter using the Bethe-Bruekner-Goldstone approach without addition of free parameters.*

Other Titles

- Recognition of relevant research carrier I3 (Acreditación I3 de Investigación destacada). Ministerio de Ciencia, Innovación y Universidad, 27/07/2019.

Post-Degree Courses

- 1st Specialization Course on Didactics of Physics (1996/97);
- 2nd Specialization Course on Didactics of Physics (1997/98);

Qualifications

- Qualification as Full Professor of the Italian Universities ("Professore di prima fascia (Ordinario)") in the section 02/D1-"*Fisica Applicata, Didattica e Storia della Fisica*", given by the Italian Minister of Education, following the evaluation by the National Scientific Qualification (Abilitazione Scientifica Nazionale, art. 16 of the law 30 December 2010). Date: 25/05/2022.
- Qualification as Associate Professor of the Spanish Universities ("Profesor Titular de la Universidad") given by the Spanish Minister of Education, following the evaluation by the National Agency of Evaluation of the Quality and Accreditation of the area of Sciences (ANECA-Agencia Nacional de Evaluación de la Calidad y Acreditación). Date: 22.11.2011
- Qualification as Professor of French Universities ("Professeur des universités") in the section 28-Milieux denses et matériaux, given by the French Minister of Education, following the evaluation by the Galaxie procedure. Nr. Qualification 19128252595, date: 07/02/2019 (also 2014).
- Qualification as Associate Professor of Italian University ("Professore Associato") in the section A02/B2- Fisica Teorica della Materia, given by the Italian Minister of Education, following the evaluation by the National Scientific Qualification (Abilitazione Scientifica Nazionale, art. 16 of the law 30 December 2010). Date: December 2013.
- Qualification as Associate Professor of French Universities ("Maître de Conférences") in the section 28- Milieux denses et matériaux, given by the French Minister of Education, following the evaluation by the Galaxie procedure. Nr. Qualification 14228252595, date: 05/02/2014.

- Qualification as Associate Professor of French Universities ("Maître de Conférences") in the section 29-Constituants élémentaires, given by the French Minister of Education, following the evaluation by the Galaxie procedure. Nr. Qualification 14229252595, date: 31/01/2014.
- Recognition as Expert of General Physics (SSD FIS/01). Title given by the Engineering Faculty, University of Palermo. Date: April 22, 2002.
- Professor of Mathematics and Physics (code A049) at the High School (Scuola Media Superiore) after a public selection for titles and interview (D. Dir del 31.3.1999). In charge from the 01.09.2001.

Research Evaluation

- Three six-years periods of research activity (sexenios de investigación) evaluated positively by the External Agency of Quality Evaluation (ACPUA - Agencia de Calidad y Perspectiva Universitaria de Aragón), Spain Date: 29.04.2011 (1998-2003, 2004-2009); 05.2016 (2010-2015),

Research and Teaching Positions

Post-doc Fellowships on Stochastic Mechanics at Palermo University, Dip.to di Fisica e Tecn. Relative

- *Spatio-Temporal Patterns induced by the Noise* April 15, 2002 – July 14, 2004. Principal investigator: Prof. B. Spagnolo.
- *Theoretical and simulative studies about the effects of noise on non-linear systems* September 1, 2004 – August 31, 2005. Principal investigator: Prof. B. Spagnolo.
- *Noise induced phenomena on biological complex systems with threshold* May 1, 2006 - December 31, 2006. Principal investigator: Prof. B. Spagnolo.
- *Stochastic dynamics and noise induced effects in complex systems*. March 1, 2009 – September 30, 2009. Principal investigator: Prof. B. Spagnolo.

Total amount of Palermo fellowships: 4 years, 6 months (54 months).

Marie Curie Post-doc Fellowship at Jagiellonian University, Cracow, Poland

- January 2007 – December 2008. Marie Curie Host Fellowships for the Transfer of Knowledge (6° framework program) at Mark Kac Center for Complex Systems Research at the Institute of Physics, Jagiellonian University, Krakow, project "Correlations in Complex Systems - COCOS - MTKD-CT-2004-517186/31-52"; Principal investigator: Prof. Dr. Hab Jerzy Jurkiewicz. Supervisor: Prof. Dr. Hab. Ewa Gudowska-Nowak.

Research contract at Zaragoza University, Spain

- October 2009 – August 2013. Post-doc position in Zaragoza University, Dept of Condensed Matter Physics, under the project FIS2008-01240 and FIS2011-25167 - MICINN: *Stochastic dynamics and noise induced effects in complex systems*. Principal investigator: Prof. Juan José Mazo Torres.

Research contract at Queen Mary, University of London, UK

- Postdoctoral Research Assistant at the School of Mathematical Sciences, Queen Mary University of London. EPSRC project GALE. Principal investigator Prof. Vito Latora. Duration 2 years.

Assistant Profesor, September 2015-September 2020.

- Assistant Professor (Profesor Ayudante Doctor) at Zaragoza University, Spain.

Actual Positions.

- Associate Professor (Profesor Titular de Universidad) at Zaragoza University, Spain. In charge from the 6/10/2021.
- Visiting scholar at the Biophysics Institute of the Italian National Research Council (CNR), Palermo unit, from 01/09/2022 till 31/08/2024.

University Didactics:

- 2019-Actuality. Biological Modelling, Master "Quantitative Biotechnology", Zaragoza University.
- 2015-Actuality. Physics 1 and 2 (1st year – Mechanics, Thermodynamics, Oscillations and Waves, Electrostatics) for Architecture courses, School of Engineering and Architecture, Zaragoza Univ.
- 2015-Actuality. Laboratory of Physics 1 and 2 for Architecture courses, Engineering School, Zaragoza Univ.
- 2010-2011. Lecturer of Statistics at the Centro Universitario de la Defensa de Zaragoza (Zaragoza Univ). Course of Engineering for the Industrial Organization
- 2008-2009. Lecturer of Physics II (2nd year – Electrodynamics and Optics) for Energetic Engineering courses, Palermo University
- 2005-2008. Lecturer of Physics 2 (2nd year – Thermodynamics, Oscillations and Waves) for Electronic and Telecommunication Engineering courses, Palermo University.

Direction of Doctoral Thesis:

- Ana Elisa Bergues-Pupo on *Mesoscopic modelling of DNA under the influence of mechanical and thermal forces* 2012-2015, University of Zaragoza. Defended on the 11th of December 2015. Co-supervised with Prof. Fernando Falo.

Evaluation: Maximum with Honour (ES: Sobresaliente Cum Laude).

- Alejandro Sáinz Agost on *Mesoscopic modelling of DNA under the influence of mechanical and thermal forces* 2012-2015, University of Zaragoza. Co-supervised with Prof. Fernando Falo.

Evaluation: In progress.

Direction of Master Degree Thesis:

- Guillermo Diéz Señorans on *Biopolymers Translocation through Nanopores (Translocación de biopolímeros a través de nanoporos)*, ay 2016-17, University of Zaragoza. Defended on the 15th of December 2017. Co-supervised with Prof. Fernando Falo.

Evaluation: 9.5/10 with Honour (ES: 9.5/10 con Matrícula de Honor).

Direction of Degree Thesis:

- Pedro García on *Polymer Translocation: study of the polymer-wall interaction. (Translocación de polímeros: estudio de interacción polímero-membrana)*. Degree in Physics, University of Zaragoza (2019-20). Co-supervised with Prof. Fernando Falo. Mark: 9.1.
- Alejandro Camón Fernández. (*Paisajes de energía libre en biomoléculas: modelos de redes de Markov*), Double Degree in Physics and Mathematics, University of Zaragoza (2021-22). Co-supervised with Prof. Fernando Falo. Mark: 8.5.
- Pablo Vizcino García. (*Modelos de Filotaxis*). Degree in Physics, University of Zaragoza (2021-22). Co-supervised with Prof. Fernando Falo. Mark: 9.5.

- Isabel Martínez Urbiola. (*Estadística y cinética de la regulación genética transcripcional*), Degree in Physics, University of Zaragoza (2021-22). Co-supervised with Prof. Fernando Faló. Mark: 8.0.

Member of the Evaluation Committee of Degree Thesis

- 2015-2016: Holder. Escuela de Ingeniería y Arquitectura. Degree in Chemistry
- 2018-2019: Holder. Science Faculty. Degree in Physics
- 2019-2020: Substitute. Science Faculty. Degree in Physics
- 2021-2022: Holder. Science Faculty. Degree in Physics

Member of the Evaluation Committee of Master Thesis

- 2020-2021: Holder. Science Faculty. Master in Physics and Physical Technologies
- 2020-2021: Substitute. Science Faculty. Master in Quantitative Biotechnology

Member of the Evaluation Committee of Doctoral Thesis

- 2021-2022: Substitute. Doctorado en Sistemi Complessi per le Scienze Fisiche, Socio-Economiche e della Vita - XXXIV ciclo. University of Catania (IT). Appointment of 20/01/2022
- 2021-2022: Substitute. Doctorado en Sistemi Complessi per le Scienze Fisiche, Socio-Economiche e della Vita - XXXIII ciclo - Azione I.1 (PON RI 2014-2020) "Dottorati innovativi con caratterizzazione industriale". University of Catania (IT). Appointment of 20/01/2022
- 2021-2022: Substitute. Doctorado en Sistemi Complessi per le Scienze Fisiche, Socio-Economiche e della Vita - XXXIV ciclo - Azione I.1 (PON RI 2014-2020) "Dottorati innovativi con caratterizzazione industriale". University of Catania (IT). Appointment of 20/01/2022
- 2021-2022: Holder. Doctorado en Sistemi Complessi per le Scienze Fisiche, Socio-Economiche e della Vita - XXXIV ciclo. University of Catania (IT). Appointment of 12/07/2022

Tutoring

- Tutor in the University Orientation Plan (Plan de Orientación Universitaria de la Universidad de Zaragoza (POUZ)) in the 1st Course of the Arquitecture Studies of the Escuela de Ingeniería y Arquitectura curso académico 2018-19. 50 Hours of dedication.

Teaching Projects

- Teaching Innovation Project: PESUZ_10_2_123, "Adaptación al plan EEEs y uso de la plataforma Moodle del curso de Estadística", Convocatorias de Innovación Docente 2010/2011 de la Universidad de Zaragoza. Coordinator. Nr of profesors involved: 3
- Teaching Innovation Project: PIIDUZ_10_2_173, "Implantación y Desarrollo de trabajos tutelados en Estadística con aplicaciones a la Defensa", Convocatorias de Innovación Docente 2010/2011 de la Universidad de Zaragoza. Participante. Nr of profesors involved: 3
- Teaching Innovation Project: PIIDUZ_10_2_173, "Desarrollo de ejercicios prácticos de estadística adaptados a la defensa bajo el soporte Excel", Convocatorias de Innovación Docente 2010/2011 de la Universidad de Zaragoza. Participante. Nr of profesors involved: 3
- Teaching Innovation Project: PIET_15_313. "Curso cero virtual de Física dirigido a estudiantes de nuevo ingreso en los grados de la Escuela de Ingeniería y Arquitectura", Convocatorias de Innovación Docente 2015/2016 de la Universidad de Zaragoza. Participante.

- Teaching Innovation Project: PIET_16_166. "Revisión, mejora y ampliación del curso cero virtual de Física para estudiantes de nuevo acceso a la EINA", Convocatorias de Innovación Docente 2016/2017 de la Universidad de Zaragoza. Participante.

Teaching updating activities

- "Elaboración de la Guía Docente". Activity of the duration of 3 hours organized by the Institute of Science of Education of the University of Zaragoza, directed to professors of university. Zaragoza 16.09.2010.
- "ADD: Iniciación a Moodle". Activity of the duration of 4 hours organized by the Institute of Science of Education of the University of Zaragoza, directed to professors of university. Zaragoza 21.09.2010.
- "Curso de Moodle Avanzado". Activity of the duration of 6 hours organized by the Institute of Science of Education of the University of Zaragoza, directed to professors of the university. Zaragoza 10.02.2011 and 16.02.2011.
- Teaching Innovation Project: PIET_15_313. "Curso cero virtual de Física dirigido a estudiantes de nuevo ingreso en los grados de la Escuela de Ingeniería y Arquitectura", Convocatorias de Innovación Docente 2015/2016 de la Universidad de Zaragoza. Participante.
- Activity "POUZ. Integración de los estudiantes en la Universidad. Binomio Tutor-Mentor (Zaragoza)" directed to the teacher for tutoring activity in the university. 17/10/2018. Two hours
- Activity "POUZ. Características e implementación" directed to the teacher for tutoring activity in the university. 17/10/2018. Two hours

Participation in Research Projects

1. International project INTAS "*Noise Induced Phenomena in Condensed Matter and in Complex Systems*", founded by the European Community, period 2002-2004. Financial budget € 60.000. Involved Institutions: Palermo University, Humboldt University of Berlin, State University Lomonosov of Moscow and State University Lobachevsky of Nizhny Novgorod. Project coordinator: Prof. Bernardo Spagnolo.
2. FORUM-INFM "*Noise-Induced Effects in See Fish Population Dynamics*", founded by the Consiglio Nazionale delle Ricerche (CNR) and Istituto Nazionale di Fisica della Materia (INFM); period 2000-2004. Financial budget 120 ML (90 ML INFM- 30ML CNR) – (€ 62.000). Involved Institutions: CNR and INFM. Project coordinator: Prof. Bernardo Spagnolo.
3. European program Stochastic Dynamics: fundamentals and applications (STOCHDYN); founded by the European Science Foundation, period 2002-2004. Financial budget € 30.000. Involved Institutions: Palermo University, Humboldt University of Berlin, Jagiellonian University of Cracow. Project coordinator: Prof. Lutz Schimansky-Geier.
4. "*Dinamica Stocastica Non Lineare di Sistemi Disordinati e Complessi*", founded by Palermo University, funds "ex 60%". Years 2004-2005-2006-2007. Financial budget € 3.800-3.300-4.400-12.300. Involved Institutions: Palermo University. Principal Investigator: Prof. Bernardo Spagnolo.
5. "*Stochastic Dynamics and Metastability in Physical and Biological Systems*", founded by Palermo University. Year 2004. Financial budget € 4.000. Involved Institutions: Palermo University, State University Lomonosov of Moscow and State University Lobachevsky of Nizhny Novgorod. Project coordinator: Prof. Bernardo Spagnolo.
6. "*Fenomeni indotti da rumore in Sistemi Biologici Complessi a Soglia*", founded by the Ministero dell'Università e della Ricerca (MIUR) tipo: PRIN. Year 2005. Financial budget € 49.400. Involved

Institutions: Palermo University, Camerino University (PG). Principal Investigator: Prof. Bernardo Spagnolo.

7. "Stochastic Dynamics and Metastability in Physical and Biological Systems- *Tipologia A*", founded by Palermo University. Year 2006. Financial budget € 2.500. Involved Institutions: Palermo University, State University Lomonosov of Moscow and State University Lobachevsky of Nizhny Novgorod. Project coordinator: Prof. Bernardo Spagnolo.
8. GEOGRID – *Laboratorio virtuale basato su una piataforma di condivisione telematica per il knowledge management del territorio* (RS-16), founded by the Ministero dell'Università e della Ricerca (MIUR), by the Ministero dell'Economia e Finanze, by the Regione Siciliana. Financial budget: € 4.600.000. Partners: TELESPAZIO, COREMED, SISPI, date: from 01.01.2006 to 31.12.2008 (36 months). Project coordinator: Prof. Goffredo La Loggia.
9. FP6 Transfer of Knowledge project "COCOS - *Correlations in Complex Systems* - MTKD-CT-2004-517186", founded by the European Community. Duration: 01.09.2005-31.08.2009; Involved institutions and partners: 14. Project coordinator: Prof. Dr. hab Jerzy Jurkiewicz.
10. Project of International Doctorate "Nonlinear Stochastic Dynamics in Complex Systems", founded by the Ministero dell'Università e della Ricerca (MIUR) and Palermo University, period 2006-2010. Financial budget € 44.000 (20.000 MIUR – 24.000 Palermo Univ.). Involved Institutions: Palermo University, State University Lomonosov of Moscow and State University Lobachevsky of Nizhny Novgorod. Project coordinator: Prof. Bernardo Spagnolo.
11. Project of International Cooperation "Nonlinear Stochastic Dynamics in Complex Systems", founded by the Ministero dell'Università e della Ricerca (MIUR) and Palermo University, period 2009-2010. Financial budget € 12.000. Involved Institutions: Palermo University, State University Lomonosov of Moscow and State University Lobachevsky of Nizhny Novgorod. Project coordinator: Prof. Bernardo Spagnolo.
12. Spanish DGICYT National project no. FIS2008-01240, cofunded by FEDER. *Dinámica y Estructura de Sistemas Complejos*. 2009-2011 Principal Investigator: Prof. Juan José Mazo Torres. Financial budget € 261.360
13. Member of the Established Research Group of the Aragon Government (Grupo de Investigación Consolidado del Gobierno de Aragón) E19 "Física Estadística y no-lineal" (2011 - BOA del 9/5/2011). Principal Investigator Prof. Mario Floría.
14. Spanish DGICYT national Project of Ministerio de Ciencia e Innovación no. FIS2011-25167, cofunded by FEDER. *Redes, Biofísica y ciencia no lineal*. 2012-2014 Principal Investigator: Prof. Juan José Mazo Torres. Financial budget € 311.390.
15. Member of the Established Research Group of the Aragon Government (Grupo de Investigación Consolidado del Gobierno de Aragón) E19 "Física Estadística y no-lineal" (2012). Principal Investigator Prof. Mario Floría.
16. Member of the Established Research Group of the Aragon Government (Grupo de Investigación Consolidado del Gobierno de Aragón) E19 "Física Estadística y no-lineal" (2013). Principal Investigator Prof. Mario Floría
17. Spanish DGICYT National project by Ministerio de Ciencia e Innovación no. FIS2014-55867-P, cofounded by FEDER "Física Estadística Y No Lineal aplicada a Sistemas Sociales, Biológicos Y Tecnológicos". 2015-2017. Principal Investigator: Prof. Juan José Mazo Torres. Budget € 223.850.
18. Member of the Established Research Group of the Aragon Government (Grupo de Investigación Consolidado del Gobierno de Aragón) E19 "Física Estadística y no-lineal" (2016). Principal Investigator Prof. Mario Floría. Financial budget € 11.620.

19. Member of the Reference Research Group of the Aragon Government E36-17R (Grupo de Referencia del Gobierno de Aragón "Grupo de Física Estadística y no-lineal (FENOL)". 2017-2019. Financial budget € 44.290.
20. Spanish DGICYT National project del Ministerio de Economía Industria y Competitividad no. FIS2017-87519-P, cofunded by FEDER "Abordando la complejidad de sistemas sociotécnicos, biológicos y naturales". 2018-2020. Principal Investigators: Dr. Yamil Moreno and Prof. Fernando Falo. Financial budget € 169.400.
21. Member of the Reference Research Group of the Aragon Government E36-20R (Grupo de Referencia del Gobierno de Aragón "Grupo de Física Estadística y no-lineal (FENOL)". 2020-2022. Financial Budget € 23.643.
22. Spanish DGICYT National project del Ministerio de Economía Industria y Competitividad no. PID2020-113582GB-I00, cofunded by FEDER "Abordando la Emergencia a Traves de Multiples Escalas". 2021-2024. Principal Investigators: Dr. Jesus Gómez-Gardeñes and Dr. Pierpaolo Bruscolini. Financial budget € 272.250.

Funds Granted

- 1.11.98 – 31.10.2001. Three years pre-doctoral grant from Minister of Education, Italy.
- 22.03.2012 – Project for the mobility of the researchers funded by the Government of Aragón, Spain. Financed budget € 5.700.
- 18.11.2023 – Awarded grant for the requalification of the Spanish University System 2021-2023, in the modality requalification of teaching staff, convened by the University of Zaragoza, in the framework of the NEXTGenerationEU program.

Attended Schools, Congresses, Seminars, Workshops

1. LXXXV congresso SIF, September 20-24, 1999, Pavia, Italy;
2. XXVI Mazurian Lakes School of Physics, September 1-11, 1999, Krzyze, Poland;
3. CRIS 2000, 3rd Catania Relativistic Ion Studies "Phase transitions in strong interactions:Status and Perspective", Acicastello, Italy, May 22-26, 2000.
4. VII Hispalensis International Summer School Nuclear Physics 2000: Master's Lessons, June 11-23, 2000, Oromana, Seville, Spain.
5. LXXXVI congresso SIF, Palermo, October 6-11, 2000.
6. Stochastic Systems: From Randomness to Complexity, July 27- August 1, 2002, Erice, Italy.
7. 16th Marian Smoluchowski Symposium on Statistical Physics: Fundamentals and Applications, September 6-11, 2003, Zakopane, Poland
8. 31st Workshop of the International School of Solid State Physics: Complexity, Metastability nonextensivity, July 20-26, 2004, Erice, Trapani, Italy.
9. Noise in Condensed Matter and Complex Systems, July 27-29, 2004 Terrasini, Palermo, Italy
10. One hundred years of Brownian Motion, Erice, Italy, July 26 - August 1, 2005
11. 19th (Centennial) Marian Smoluchowski Symposium on Statistical Physics 13-18 May 2006, Krakow.
12. Ecological Complex Systems: Stochastic Dynamics and Patterns, July 22-26, 2007, Terrasini, Palermo
13. 20th Smoluchowski Symposium on Statistical Physics September 22-27, 2007, Zakopane, Poland
14. 5th International conference on Unsolved Problems on Noise (UPON) June 2-6, 2008, Lyon, France.
15. Stochastic Resonance 2008 International Conference, August 16-21, 2008, Perugia, Italy

16. 21th Smoluchowski Symposium on Statistical Physics, September 13-18, 2008, Zakopane, Poland
17. International Workshop on "Complex Energy Landscapes: Computational and Statistical Methods for Soft Matter, Zaragoza node of CECAM (ZCAM), June 2-4, 2010, Zaragoza, Spain
18. IV Spanish-Portuguese Biophysical Congress 2010, Zaragoza, July 7-10, 2010
19. Sigma-Phi - International conference on Statistical Physics 2011, Larnaca, Cyprus, July 11-15, 2011
20. 24th Smoluchowski Symposium on Statistical Physics September 17-22, 2011, Zakopane, Poland
21. XXIV Sitges International Conference on Statistical Mechanics. Sitges, Barcelona, Spain, 4-8 June, 2012
22. VI National Conference BIFI 2013, Zaragoza, Spain, 30/01-01/02, 2013.
23. 38th Conference of the Middle European Cooperation in Statistical Physics, MECO38, ICTP, Trieste, Italy, 25 - 27 March 2013.
24. Mediterranean School of Complex Networks, June 9-13 2014, Salina, Italy.
25. Biology for Physics, January 15-18, 2017, Barcelona, Spain
26. XXI National Spanish Statistical Physics Congress FisES2017, 30/03-02/06, 2017, Sevilla, Spain
27. 30th Marian Smoluchowski Symposium on Statistical Physics, September 3-8, 2017, Cracow, Poland
28. Conference "New Trends in Nonequilibrium Statistical Mechanics: Classical and Quantum Systems", July 25-31, 2018, Erice, Trapani, Italy.
29. Cátedra Santander day on TIC for teaching, September 3-8, 2018, Zaragoza, Spain
30. XXII National Spanish Statistical Physics Congress FisES2018, 18-20/10, 2018, Madrid, Spain
31. BIFI2019 IX National Conference, 30/01-01/02, 2019, Zaragoza, Spain
32. XVII Jornada del Departamento de Física de la Materia Condensada, 28/06/2019, Zaragoza, Spain
33. StatPhys27, 8-12/07/2019, Buenos Aires, Argentina
34. BIFI2021 X National Conference, 03/02-05/02, 2021, Zaragoza, Spain
35. Granada Seminar 16th ed: "New Frontiers in nonequilibrium Statistical Physics: from fundamentals, fluctuation and hydrodynamics to biology and quantum nonequilibrium". June 18, 2021, Granada, Spain.
36. XXIII National Spanish Statistical Physics Congress FisES2022, 12-14/05/2022, Zaragoza, Spain
37. XXXV Smoluchowski Symposium on Statistical Physics, 17-21/09/2022, Cracow, Poland.

Other activities

- Member of the organizing committee of the International Workshop on *Noise in Condensed Matter and Complex Systems*: 26-29 July 2004, Terrasini, Italy.
- Member of the organizing committee of the International Workshop on *Ecological Complex Systems: Stochastic Dynamics and Patterns*: July 22-26, 2007, Terrasini, Italy.
- Member of the organizing committee of the XXIII National Spanish Statistical Physics Congress FisEs22: May 12-14, 2022, Zaragoza, Spain.
- Chairman of session in the XXIII National Spanish Statistical Physics Congress FisEs22: May 12-14, 2022, Zaragoza, Spain.
- One of the coordinators of the Open week of Physics (Semana de inmersión), 11-15 June 2018. Introduction of the research activities of the Department of Condensed Matter Physics to selected students from the secondary school.

- One of the coordinators of the Open week of Physics (Semana de inmersión), 10-14 June 2019.
Introduction of the research activities of the Department of Condensed Matter Physics to selected students from the secondary school.
- One of the coordinators of the Open week of Physics (Semana de inmersión), 13-17 June 2022.
Introduction of the research activities of the Department of Condensed Matter Physics to selected students from the secondary school.

Research Visits:

- 2004 (April 26-June 11) Institute of Physics, Humboldt-University, Berlin, Germany.
- 2004 (October 26-November 25). Institute of Physics, Jagiellonian University, Cracow, Poland.
- 2008 (November 17-25) Institute of Physics, Humboldt-University, Berlin, Germany.
- 2008 (December 5-12) Institute of Mathematics and Computer Science, Wrocław University of Technology, Poland.
- 2009 (January-February) Dept. of Physics, East Carolina University, Greenville, NC (USA).
- 2010 (October 14-November 2) Institute of Physics, Jagiellonian University Cracow, Poland.
- 2012 (April 12-17) Barcelona University, Barcelona, Spain.
- 2012 (July 16-19) Universidad Pedagógica y Tecnológica, Tunja, Colombia.
- 2012 (July 23-24) Universidad Nacional de Colombia, Manizales, Colombia
- 2015 (March 17-21) Medical University of Vienna, Vienna, Austria.
- 2016 (January 17-28) Queen Mary University of London, London, United Kingdom.

Seminars:

- .1 *Nonmonotonic behaviour of the stability measures in cubic potentials*, Institute of Physics of Humboldt-University, Berlin, in the Interdisciplinary seminar "Irreversible processes and selforganization" (IPSO), May 11, 2004.
- .2 *Noise enhanced stability*, Institute of Physics of Jagiellonian University, Cracow, November 15, 2004.
- .3 *An introduction to the Maxwell distribution of the velocities*, Institute of Physics of Jagiellonian University, Cracow, February 13, 2008.
- .4 *Active Brownian motion in smooth ratchet potentials*, Institute of Physics of Jagiellonian University, Cracow, May 19, 2008.
- .5 *Directionality control of active Brownian particle by mean of both Gaussian white and shot noise*, Institute of Physics Humboldt-University, Berlin, November 24, 2008.
- .6 *Directionality control of active Brownian particle by mean of both Gaussian white and shot noise*, Wrocław University of Technology, December 10, 2008.
- .7 *Translocation times of polymers in metastable states*, East Carolina University, Greenville (USA), January 30, 2009
- .8 *Effects of noise in Biology*, Centro de Investigación Biológica, Madrid, February 20, 2009
- .9 *Overview on recent works on Metastability and Active Brownian Motion*, Dept. of Cond. Matter Physics, Statistical and Nonlinear Physics Group, Zaragoza, October 8, 2009
- .10 *Modelos sencillos en la translocación de polímeros*, VIII Jornada Científica del Departamento de Física de la Materia Condensada, University of Zaragoza, Zaragoza, June 22, 2010

- .11 Motores moleculares y modelos de translocación de polímeros, Seminar on Neuroscience “Neurociencias Joven”, at the “Instituto Aragonés de Ciencias de la Salud”, Zaragoza, November 9, 2011
- .12 Translocación de polímeros asistida por motores periódicos y estocásticos. Seminars of the group of Statistical and Nonlinear Physics, University of Zaragoza, 16 Febrero, 2012
- .13 Translocación de polímeros asistida por motores moleculares, Universitat de Barcelona, Abril 13, 2012.
- .14 Translocación de polímeros en motores moleculares y efectos de activación térmica, Universidad Nacional de Colombia sede de Manizales, July 24, 2012.
- .15 Riduzionismo, evoluzionismo, creazionismo: l'impatto della scoperta dei motori molecolari tra religione e scienza. Seminario di Logica e Filosofia della Scienza, Facoltà di Scienze della Formazione, Università di Palermo, April 3, 2013.
- .16 Driven polymer translocation and molecular motors, Lab. de Physique Théorique de la Matière Condensée - CNRS UMR 7600 Université Pierre et Marie Curie Paris 6, September 6, 2013.
- .17 Driven Mesoscopic models of polymer translocation and DNA dynamics, Imdea Nanociencias – Ciudad Universitaria de Cantoblanco, Madrid, September 25th, 2013.
- .18 Force spectroscopy approach in polymer translocation, XVII Jornada Científica del Departamento de Física de la Materia Condensada, Paraninfo, Zaragoza, Spain, June 28, 2019.

Talks at Workshops-Conferences-Schools

- **Invited talks:**

- .1 Potenziale di particella singola ed energia di legame della materia nucleare, LXXXVI SIF congress, October 6-11, 2000 Palermo.
- .2 Role of the colored noise in the pattern formation of a Lotka-Volterra system, Noise in Condensed Matter and Complex Systems, July 26-29, 2004, Terrasini, Italy.
- .3 Noise Effects in Cancer Growth Influenced by Spontaneous Fluctuations and Periodic Treatment, Ecological Complex Systems: Stochastic Dynamics and Patterns, July 22-26, 2007, Terrasini, Italy.
- .4 Polymer translocation driven by motors, 24th Smoluchowski Symposium on Statistical Physics September 17-22, 2011, Zakopane, Poland.
- .5 A dynamical model for the full stretching curve of DNA, XXIV Sitges International Conference on Statistical Mechanics. Sitges, Barcelona, Spain, 4-8 June, 2012
- .6 A mesoscopic model for the DNA G-quadruplex stability analysis, 30th Smoluchowski Symposium on Statistical Physics, September 3-8, 2017, Cracow, Poland.
- .7 Modeling the DNA/RNA G-quadruplex mechanical unfolding, New Trends in Nonequilibrium Statistical Mechanics: Classical and Quantum Systems, July 25-31, 2018, Erice, Italy.
- .8 Polymer Translocation through Active Nanopores, BIFI2019 IX National Conference, 30/01-01/02, 2019, Zaragoza, Spain
- .9 Overview and Updates on the BIFI research lines Physical Modelling of Biomolecules, BIFI2021 X National Conference, 03/02-05/02, 2021, Zaragoza, Spain

- **Regular Talks:**

- .1 *Stochastic Resonance in piecewise linear asymmetric potential and comparison with Resonant Activation*, Stochastic Resonance 2008 International Conference, Perugia, August 16-21 2008
- .2 *Role of the asymmetry in piecewise linear potential on Stochastic Resonance and Resonant Activation*, 21st Marian Smoluchowski Symposium on Statistical Physics, Zakopane, Poland, September 13-18, 2008.
- .3 *Simple models in polymer translocation*, IV Spanish-Portuguese Biophysical Congress 2010, Zaragoza, July 7-10, 2010
- .4 *Models in driven polymer translocation*, Sigma-Phi - International conference on Statistical Physics 2011, Larnaca, Cyprus, July 11-15, 2011.
- .5 *DNA (over)stretching: a dynamical model*, VI National Conference BIFI 2013, Zaragoza, Spain, January 30, 2013.
- .6 *Recommendation Algorithms and Link Predictions in Bipartite Networks*, Mediterranean School of Complex Networks, June 9-13 2014, Salina, Italy (Abstract).
- .7 *Modelling the DNA G-quadruplex unfolding*, XVIII FisES Congress, Madrid, Spain, October 18-20, 2018.
- .8 *Force analysis in polymer translocation*, StatPhys27, Buenos Aires, Argentina, July 8-12, 2019.
- .9 *Analytical Extension/Force curve of the Extensible Freely Jointed Chain Model (EFJC) and Worm-like Chain Model (EWLC)*, XXXV Smoluchowski Symposium on Statistical Physics, 17-21/09/2022, Cracow, Poland

○ **Co-author of Invited talks (partial):**

- .1 *B. Spagnolo, O. A. Chichigina, A. Fiasconaro, D. Valenti, Noise in Biological Systems: Phenomenology and Theoretical Models*, International Symposium Topical Problems of Nonlinear Wave Physics Nwp-2005. "Nonlinear Dynamics: Theory and Applications", St.-Petersbourg Nizhny Novgorod, Russia, August 2-9, 2005. Presented by Prof. B. Spagnolo.
- .2 *B. Spagnolo G. Augello, A. Fiasconaro, N. Pizzolato, D. Valenti, Enhancement of stability in systems with metastable states*, CTNEXT07 Conference, Catania, July 2, 2007. Presented by Prof. B. Spagnolo.
- .3 *B. Spagnolo, S. Spezia, L. Curcio, N. Pizzolato, A. Fiasconaro, D. Valenti, P. Lo Bue, E. Peri, S. Colazza, Noise effects in two biological systems*, in Stochastic Resonance 2008 International Conference, August 16-21, 2008, Perugia, Italy. Presented by Prof. B. Spagnolo.
- .4 *B. Spagnolo, A. Fiasconaro, N. Pizzolato, D. Valenti, D. Persano Adorno, Cancer growth dynamics: stochastic models and noise induced effects*, CPn29, Noise and Fluctuations, 20th International Conference (ICNF), Pisa, June 14-19, 2009. Presented by Prof. B. Spagnolo.
- .5 *W. Ebeling, A. Fiasconaro, E. Gudowska-Nowak, Yu.M. Romanovsky, M. Zabicki, Shot noise models and efficiency of ATP-driven nanoscale machines operating under far-from-equilibrium conditions*, Noise in Non-Equilibrium Systems: From Physics to Biology International Workshop – Dresden, April 11 - 14, 2011. Presented by Prof. Werner Ebeling

Peer referee for the following journals:

- Physical Review E
- PLoS ONE
- Physics Letters A, Elsevier.
- European Journal of Physics B, Springer.

-Fluctuation and Noise Letters, World Scientific.

-Physica Scripta

ly 9-13, 2001.

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