

## PERSONAL INFORMATION Palade Dragoș Iustin

 National Institute for Laser, Plasma and Radiation Physics

 +40734060650

 [dragos.palade@inflpr.ro](mailto:dragos.palade@inflpr.ro), [dragos.i.palade@gmail.com](mailto:dragos.i.palade@gmail.com)

Sex M | Date of birth 04/06/1991 | Nationality Romanian

## POSITION WITHIN THE PROJECT Member of the team

## WORK EXPERIENCE Plasma and turbulence modelling. Code development for turbulent transport studies

01/04/2021 – ongoing **Scientific Researcher 3rd degree**  
National Institute for Laser, Plasma and Radiation Physics (<https://inflpr.ro>)  
[Business or sector](#) research

01/08/2016 – 31/03/2021 **Scientific Researcher**  
National Institute for Laser, Plasma and Radiation Physics (<https://inflpr.ro>)  
[Business or sector](#) research

01/10/2013 – 31/07/2016 **Research Assistant**  
National Institute for Laser, Plasma and Radiation Physics (<https://inflpr.ro>)  
[Business or sector](#) research

## EDUCATION AND TRAINING

01/10/2015 – 31/09/2019 **PhD in theoretical physics** EQF 8  
Faculty of Physics, University of Bucharest, Romania  
Theoretical Physics  
Diploma: „Applications of transport models in the study of quantum plasmas”  
Qualification: Suma cum Laude

01/10/2013 – 31/06/2015 **Mcs in theoretical physics** EQF 7  
Faculty of Physics, University of Bucharest, Romania  
Theoretical and Computational Physics  
Diploma: „ Theoretical tools for simulations of cluster dynamics in strong laser pulses

01/10/2013 – 31/06/2015 **Bcs in physics** EQF 6  
Faculty of Physics, University of Bucharest, Romania  
Diploma: „ Electron ground-state and dynamics in metallic clusters. A case of study: C60 fullerene ”

**PERSONAL SKILLS**

Mothertongue(s) Romanian

Otherlanguage(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spokeninteraction	Spokenproduction	
English	B2	B2	B2	B2	B2
Replacewithname of language certificate. Enterlevelifknown.					

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficientuser  
[Common European Framework of Reference for Languages](#)

Organisational / managerial skills

- Leadership ( the leader of a research goup of 5 people)

Job-relatedskills

- Plasma physics and turbulence
- Many-body quantum systems
- Numerical modelling and code developement

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent	Independent	Independent	Independent	Independent

Levels: Basic user - Independent user - Proficientuser  
[Digital competences - Self-assessmentgrid](#)

Replacewithname of ICT-certificate(s)

- Pachetul Microsoft Office, Latex
- Mathematica, Fortran, C++
- Linux

Drivinglicence B

## Publications

- *Overview of the EUROfusion Tokamak Exploitation programme in support of ITER and DEMO*, EH Joffrin, M Wischmeier, M Baruzzo, A Hakola, A Kappatou, D Keeling, Nuclear Fusion 2024/2/21
- *Predicting the turbulent transport of cosmic rays via neural networks*, DI Palade, Journal of Cosmology and Astroparticle Physics 2024 (01), 002
- *Scaling laws of two-dimensional incompressible turbulent transport*, DI Palade, LM Pomârjanschi, M Ghiță, Physica Scripta 99 (1), 015201
- *Approximations of the modified Bessel functions of the second kind . Applications in random field generation*, DI Palade, LM Pomârjanschi, Romanian Journal of Physics, 2023
- *“Peaking and hollowness of low-Z impurity profiles: an interplay between ITG and TEM induced turbulent transport”*, DI Palade, Nuclear Fusion 63 (4), 046007 (2023)
- *„Enhanced performance in fusion plasmas through turbulence suppression by megaelectronvolt ions”*, S Mazzi, J Garcia, D Zarzoso, YO Kazakov, J Ongena, M Dreval, .Nature Physics 18 (7), 776-782 (2022)
- *„Disruption prediction with artificial intelligence techniques in tokamak plasmas”*J Vega, A Murari, S Dormido-Canto, GA Rattá, M Gelfusa, Nature Physics 18 (7), (2022)
- *„Overview of JET results for optimising ITER operation”*, J Mailloux, N Abid, K Abraham, P Abreu, O Adabonyan, P Adrich, ... Nuclear Fusion 62 (4), 042026, (2022)
- *„Effects of intermittency via non-Gaussianity on turbulent transport in magnetized plasmas”*, DI Palade, L Pomârjanschi, Journal of Plasma Physics 88 (2), 905880202, (2022)
- *„Turbulent transport of the W ions in tokamak plasmas: properties derived from a test particle approach”*, authors: D. I. Palade, M. Vlad, F. Spineanu, Nuclear Fusion 61, 116031 (2021)
- *“Fast generation of Gaussian random fields for direct numerical simulations of stochastic transport”*, authors: D.I. Palade, M. Vlad, Statistics and Computing 31, 60 (2021);
- *“Turbulent transport of fast ions in tokamak plasmas in the presence of resonant magnetic perturbations”*, authors: D.I.Palade, Physics of Plasmas 28, 022508 (2021);
- *“Effects of the parallel acceleration on heavy impurity transport in turbulent tokamak plasmas”*, autori: M. Vlad, D.I. Palade, F. Spineanu, PLASMA PHYSICS AND CONTROLLED FUSION, Published: December 2020
- *“Trapped electron modes turbulence: test modes approach”*, V. V. BARAN, D. I. PALADE, M. VLAD, F. SPINEANU, Romanian Journal of Physics 64, 502 (2019)
- *“Nonlocal orbital-free kinetic pressure tensors for the Fermi gas”*, D. Palade, Phys. Rev. B 98, 245401 (2018)
- *“The Schrodinger-Poisson-Induction system: rotational effects in the fluid turbulence of a 2D quantum plasma”*, D. I. Palade, V. Baran, Romanian Journal of Physics 63, 504 (2018)
- *“Turbulent transport of alpha particles in tokamak plasmas”*, A. Croitoru, D. I. Palade, M Vlad, F Spineanu, 2017 Nucl. Fusion 57 036019
- *“Semiclassical approaches to the Coupling between Nuclear Dipole Modes and Surface vibrations”*, V. Baran, D. G. David, D.I. Palade, Romanian Journal of Physics, 2016, vol 61, no 5-6
- *“Multiple surface plasmons in an unbounded quantum plasma half-space”* D. I. Palade, Phys. Plasmas 23, 074504 (2016)
- *“N-Block Separable Random Phase Approximation: Dipole oscillations in sodium clusters and C60 fullerene”*, D.I. Palade, V. Baran, Journal of Physics B: Atomic, Molecular and Optical Physics, Vol 49, no 17
- Baran, V., et al. *“Collectivity of the pygmy dipole resonance within schematic Tamm-Dancoff approximation and random-phase approximation models.”*Physical Review C 91.5 (2015): 054303.
- *“Collective Dynamics and Fragmentation in Nuclear Systems”* V. Baran, M. Marciu, D.I. Palade, M. Colonna, M. di Toro, A.I. Nicolin, R. Zus, Romanian Journal of Physics, 5-6 (2015)
- Palade, D. I., and V. Baran. *“Optical response of C60 fullerene from a time dependent Thomas Fermi approach.”* Journal of Physics B: Atomic, Molecular and Optical Physics 48.18 (2015): 185102.
- Palade, D. I., and V. Băran *“General static polarizability in spherical neutral metal clusters and fullerenes within Thomas -Fermi theory.”* (September, 2015, Romanian Journal of Physics)

## Presentations

- *Direct numerical simulations of the turbulent transport of heavy impurities in tokamak plasmas/* D.I. Palade, M. Vlad, F. Spineanu, 19th INTERNATIONAL CONFERENCE ON PLASMA PHYSICS AND APPLICATIONS, 31Aug – 03Sept 2021 Iași, Romania; Oral Presentation
- *Turbulent transport control by tokamak plasma rotation/* The 13th CHAOS 2020 International Conference (virtual): D. I. Palade, M. Vlad, F. Spineanu/9-12 Iunie 2020/oral presentation
- *Stochastic transport in strongly turbulent plasmas,* D. I. Palade, 18 th International Conference on Plasma Physics and Applications, Iași, România, June 20-22, 2019
- *Time-Dependent Orbital-Free Density Functional Theory for the fermionic gas,* D.I. Palade; "Annual Scientific Session of Faculty of Physics", 22 June 2018, Bucharest, Romania
- *Turbulence and instabilities in quantum plasmas: pressure effects,* D. I. Palade, Joint Meeting "Quantum Fields and Nonlinear Phenomena" April, 2018, Sinaia, România.
- *Turbulent transport of alpha particles in tokamak plasma,* D.I. Palade, A. Croitoru, M., Vlad, F. Spineanu, Joint Meeting "Quantum Fields and Nonlinear Phenomena" April, 2016, Sinaia, România
- *Kinetic corrections and rotational flows in the 2D turbulence of quantum plasmas",* D.I. Palade V. Baran; "Annual Scientific Session of Faculty of Physics", 23 June 2017, Bucharest, Romania
- *"Multiple surface plasmons in an unbounded quantum plasma half-space "* , D.I. Palade; "Annual Scientific Session of Faculty of Physics", 24 June 2016, Bucharest, Romania
- *"Extended Brown-Bolsterli model of RPA" ,* D.I. Palade, V. Baran; "Annual Scientific Session of Faculty of Physics", 23 June 2015, Bucharest, Romania
- *"Optical response in C60 fullerene from a Time- Dependent Thomas-Fermi approach" ,* D.I. Palade, V. Baran; "Annual Scientific Session of Faculty of Physics", 23 June 2014, Bucharest, Romania
- *"Static polarizabilities in neutral metal clusters",* D. I. Palade; "Annual Scientific Session of Faculty of Physics", 21 June 2013, Bucharest, Romania.

## Conferences

- 19th INTERNATIONAL CONFERENCE ON PLASMA PHYSICS AND APPLICATIONS CPPA 2021, 31Aug – 03Sept 2021 Iași, Romania; Oral Presentation: " Direct numerical simulations of the turbulent transport of heavy impurities in tokamak plasmas."
- 28th IAEA Fusion Energy Conference "Turbulent transport of the W ions in Tokamak Plasmas / D. I.Palade, M. Vlad, F. Spineanu/10-15 May 2021/poster
- The 13th CHAOS 2020 International Conference (virtual):/Turbulent transport control by tokamak plasma rotation/ D. I. Palade, M. Vlad, F. Spineanu/9-12 Iunie 2020/oral presentation
- 18th European Fusion Theory Conference , October 7-10, 2019; Ghent, Belgium; Poster: " Decorrelation PDF Method for stochastic transport in strongly turbulent plasmas "
- 18th INTERNATIONAL CONFERENCE ON PLASMA PHYSICS AND APPLICATIONS CPPA 2019, 20th – 22nd June 2019 Iași, Romania; Presentation: " Stochastic transport in strongly turbulent plasmas "
- 18 th International Balkan Workshop on Applied Physics Constanța, Romania, July 10-13, 2018 ; Oral presentation: "Time-dependent orbital-free density functional theory for the fermionic gas"
- Joint Meeting "Quantum Fields and Nonlinear Phenomena" April, 2018, Sinaia, Romania Oral presentation: "Turbulence and instabilities in quantum plasmas: pressure effects"
- "45th IOP Plasma Physics Conference", 9-13 April, 2018; Belfast, UK
- "Collisionless Boltzmann (Vlasov) Equation and Modeling of Self-Gravitating Systems and Plasmas", October 30 - November 3, 2017 ; Poster : " Non-equilibrium hydrodynamic pressure tensors from kinetic

perspectives"

- Joint Meeting "Quantum Fields and Nonlinear Phenomena" March, 2016, Sinaia, Romania, Presentation: "Turbulent transport of alpha particles in tokamak plasma" D.I. Palade, A. Croitoru, M. Vlad, F. Spineanu
- European Fusion Programme Workshop, 1 - 3 December 2014, Split, Croatia
- Joint ICTP-IAEA College in Advanced Plasma Physics, 18-29/08/2014 , Trieste, Italy ; Poster: "Selforganization of avalanches in tokamak plasma: a turbulence perspective"
- International Summer School for Advanced Studies: "Dynamics of open nuclear systems", Predeal, Romania, (July 2012)