Curriculum Vitae - Camille Granier

Nationality	French
Birth date	November 1996 (27 yo)
Email address	camille.granier@ipp.mpg.de

Employment

Jul. 2023 - **Postdoctoral Researcher,** Max-Planck-Institut für Plasmaphysik (IPP), Germany
In Prof. F. Jenko's Division

Feb. - Jun. 2023 **Postdoctoral Researcher,** Observatoire de la Côte d'Azur, CNRS, Nice, France
Postdoctoral contract (5 months)
With Dr. T. Passot (CNRS), Dr. E. Tassi (CNRS)

Education

2019 - 2022 **PhD in Physics,** Université Côte d'Azur, France **-** Politecnico di Torino, Italy
New developments in the theory of current sheet instabilities in collisionless plasmas
Advisor: Dr. E. Tassi (CNRS-UCA), Co-advisor: Dr. D. Grasso (CNR-Politecnico)
Official date of the defense : 16 December 2022

2017 - 2019 **M.Sc in Physics,** Université de Bordeaux, France
Thesis: *Coherent magnetic structures in the solar wind plasma*, conducted at the Laboratoire Lagrange, Observatoire Côte d'Azur, Nice
Advisor: Dr. E. Tassi
First year project: *Gaps in protoplanetary disks through observations (VLT, ALMA),* conducted at the Laboratoire d'Astrophysique de Bordeaux
Advisor: Dr. E. Di Folco

2015 - 2017 **B.Sc in Mathematics,** Université de Montpellier, France

2014 - 2015 **Higher School Preparatory Classes,** Université Blaise Pascal, Clermont-Ferrand, France

Awarded Grants

2020 Vinci mobility grant issued by the Université franco-italienne

2019 – 2022 Scholarship for a PhD position issued by the French Ministry of Education

Publications in International Refereed Journals

Submitted ApJ **C. Granier**, S. S. Cerri, F. Jenko**,** *Electron-only reconnection and ion heating in 3D hybrid-Vlasov plasma turbulence.* *https://arxiv.org/abs/2405.16686*

2024 T. Passot, S. S. Cerri, **C. Granier**, D. Laveder, P.L. Sulem, E. Tassi, *Gyrofluid simulations of turbulence and reconnection in space plasmas,* https://arxiv.org/abs/2401.03863

2024 **C.Granier**, E. Tassi, D. Laveder, T. Passot, P.L. Sulem, *Influence of ion-to-electron temperature ratio on tearing instability and resulting subion-scale turbulence in a low-βe collisionless plasma,* Physics of Plasmas, https://arxiv.org/abs/2311.01539

2023 **C. Granier**, R. Numata, D. Borgogno, E. Tassi, D. Grasso, *Investigation of the collisionless plasmoid instability based on fluid, gyrofluid and gyrokinetic integrated approach,* J. Plasma Phys. https://arxiv.org/abs/2302.03073

2022 **C. Granier**, D. Borgogno, L. Comisso, D. Grasso, E. Tassi, R. Numata, *Marginally Stable Current Sheets in Collisionless Magnetic Reconnection*. Phys. Rev. E. 106, L043201 https://doi.org/10.1103/PhysRevE.106.L043201

2022 **C. Granier**, D. Borgogno, D. Grasso, E. Tassi, *Gyrofluid analysis of electron βe effects on collisionless reconnection*, J. Plasma Phys. 88 905880111.
https://doi.org/10.1017/S0022377822000010

2021 **C. Granier**, E. Tassi, D. Borgogno, D. Grasso, *Impact of electron temperature anisotropy on the collisionless tearing mode instability in the presence of a strong guide field*, Physics of Plasmas, 28 022112.
https://doi.org/10.1063/5.0037227

2020 **C. Granier** & E. Tassi, *Linear stability of magnetic vortex chains in a plasma in the presence of equilibrium electron temperature anisotropy,* J. Phys. A: Math and Theor.*,* 53 385702.
https://doi.org/10.1088/1751-8121/aba466

Conference Proceedings

2022 **C. Granier**, D. Borgogno, L. Comisso, D. Grasso, R. Numata, E. Tassi *Fluid and gyrokinetic simulations of plasmoid formation in collisionless plasmas,* Proceedings of the 48th EPS Conference on Plasma Physics, O1.402

HPC time project

2022 Member of a EUROfusion project. 1M CPU-hr on Marcon3 for plasmoid instability simulations

2021 PI of an ISCRA project (grant n. HP10CY8TU5) 16k CPU-hr on Marconi100 for magnetic reconnection simulations

Research Visits

Jun. 2024 Visit to **CCA Flatiron** institute and **Columbia University**.

Apr. 2024 Invited by Prof. F. Bacchini to visit to the Plasma Astrophysics unit of the Department of Mathematics at **KU Leuven** to start a collaboration on relativistic magnetic reconnection with Dr. Daniel Groselj.

Dec. 2023 Invited by Prof. J. Buechner to visit the department: Sun and Heliosphere of the **Max Planck Institute for Solar System Research**.

Feb. 2022 Visit to the Theoretical High Energy Astrophysics group at **Columbia University** to collaborate with Dr. Luca Comisso on the identification of plasmoid marginal stability conditions in collisionless plasmas.

Nov. 2020 to Dec. 2021 Period spent at the Dipartimento di Energia of the **Politecnico di Torino** in the framework of a PhD co-tutorship, to collaborate with Dr. Daniela Grasso and Dr. Dario Borgogno on the implementation of numerical codes for solving gyrofluid models and on numerical simulations of magnetic reconnection.

Invited Talks at International Conferences

2024 *New insights in magnetic reconnection through gyrofluid modelling*
Invited talk at the 17th Congress of the French Physical Society, Plasma Division (Rouen, France)

2023 *New insights in current sheet instability theory through combined gyrofluid and gyrokinetic approaches*
Invited talk at 20th European Fusion Theory Conference (Padova, Italy)

2023 *Gyrofluid and gyrokinetic approaches for non-collisional plasmoid instability with finite βe*
Invited talk at European Conference on Magnetic Reconnection in Plasmas (Marseille, France)

2022 *Non-collisional plasmoid instability based on gyrofluid and gyrokinetic simualtions*
Invited talk at the 6th Asia-Pacific Conference on Plasma Physics, (Online)

Oral Contributions at International Conferences and Workshops

2024 *Electron-only reconnection and ion heating in 3D3V hybrid-Vlasov plasma turbulence*
Transalpine workshop on magnetic reconnection and turbulence, (Nice, France)
Member of the Scientific Committee

2023 *Gyrofluid and gyrokinetic approaches for non-collisional plasmoid instability with finite βe*
49th IOP Conference (Oxford, UK)

2022 *Gyrofluid and gyrokinetic investigation of the plasmoid instability in collisionless current sheets*
Arcetri 2022 Workshop on Plasma Astrophysics (Florence, Italy)

2022 *Fluid and gyrokinetic simulations of plasmoid formation in collisionless plasmas*
Oral contribution at the 48th EPS Conference on Plasma Physics, (Online)

Poster Contribution at International Conferences and Schools

2024 *Electron-only reconnection and ion heating in 3D3V hybrid-Vlasov plasma turbulence*
Simons Collaboration on Extreme Electrodynamics of Compact Sources Summer School (St. Louis, USA)

2024 *Electron-only reconnection and ion heating in 3D3V hybrid-Vlasov plasma turbulence*
Waves And Complexity: Nonlinearity, complex phenomena and universality for waves Summer School (Porquerolles, France)

2022 *Gyrofluid and gyrokinetic approaches for non-collisional plasmoid instability withe finite βe*
Waves And Complexity: Nonlinearity, complex phenomena and universality for waves Summer School (Porquerolles, France)

2021 *Gyrofluid investigation of finite βe effects on collisionless reconnection*
19th European Fusion Theory Conference (Online)

2021 *Gyrofluid investigation of electron FLR effects on collisionless reconnection*
58th Culham Plasma Physics Summer School (Culham Science Centre in Oxfordshire, UK)

2021 *A gyrofluid model to investigate collisionless reconnection with finite βe effects*
WINE conference, session Waves and Turbulence in Space Plasmas, Planetary Atmosphere and Oceans (Online)

2019 *Magnetic coherent structures in the presence of equilibrium temperature anisotropy*
Waves Cote d'Azur conference, session Nonlinear waves and turbulence in space plasmas (Nice, France)

Seminars

2023 IRCC Meeting, (Online)

2023 **Invited**
Tearing and secondary instabilities in collisionless plasmas based on gyrofluid modelling
JPP Frontiers in Plasma Physics Colloquium, (Online)
Recording: https://mediacentral.princeton.edu/id/1_2xwxhp4m

2023 **Invited**
Gyrofluid modelling of current sheets instability in collisionless plasmas based
Seminar of the Numerical Methods in Plasma Physics Division of the Max Planck institute for Plasma Physics, (Garching, Germany)

2023 **Invited**
Current sheets instability in collisionless plasmas based on gyrofluid models
Seminar of the Plasmas, Théorie et Modélisation group of the Laboratory of Physics of the Interactions of Ions and Molecules, (Marseille, France)

2022 *A gyrofluid model to investigate collisionless reconnection with finite β_e effects*
Seminar of the THEA group of Columbia University (New York, USA)

2021 *Tearing instability in a microscopic current sheet with a strong guide field and equilibrium temperature anisotropy*
Seminar of the Plasma Physics group of Politecnico di Torino (Turin, Italy)

2019 *Magnetic coherent structures in the solar wind plasma in the presence of temperature anisotropy*
Seminar of the Plasma group of Laboratoire Lagrange (Nice, France)

2019 *Magnetic coherent structures in the solar wind plasma*
Seminar of the Planetology group of Laboratoire Lagrange (Nice, France)

Public outreach

2021 *Coherent structures and magnetic reconnection in collisionless plasmas*
8th Physics Doctoral Days of Nice University (Agay, France)

2021 *Etude des structures cohérentes et de la reconnexion magnétique dans les plasmas non-collisionnels*
Journées Lagrange, organized by the Lagrange Laboratory (Online presentation in French.
Youtube link: https://youtu.be/9UkC3qkquy8)

2020 *Magnetic reconnection in the presence of temperature anisotropy*
7th Physics Doctoral Days of Nice University (Porquerolles, France)

Other References and Collaborators

Dr. Silvio S. Cerri, CNRS, Laboratoire J.-L. Lagrange, Observatoire de la Côte d'Azur, silvio.cerri@oca.eu
Dr. Thierry Passot CNRS, Laboratoire J.-L. Lagrange, Observatoire de la Côte d'Azur, thierry.passot@oca.eu
Dr. Luca Comisso,
Dr. Daniel Groselj,
Prof. Fabio Bacchini,
Prof. Ryusuke Numata,

Languages

French Native

English Full professional proficiency

Italian Medium proficiency

Spanish Elementary proficiency

German Elementary proficiency