

PERSONAL INFORMATION **Jacopo Fiore**

PH.D. EXPERIENCE

November 2021 – Present

Ph.D. student in Physics

Physics Department, Sapienza University of Rome

Thesis project: "Time and frequency resolved non-linear THz spectroscopies in unconventional superconductors", supervisor Prof. Lara Benfatto

February 2022 - Present

Allievo Ph.D. at Sapienza School for Advanced Studies (SSAS)

- Invited talks**
- "More is differently different: the multiphased nature of condensed matter", Ph.D. students' seminars, Physics Department, Sapienza University of Rome, 2023
 - "THz spectroscopy on MgB₂: a case study for disordered systems", Lebedev Institute of Moscow (online), 2022
 - "Contribution of Superconducting Fluctuations to Third Harmonic Generation in MgB₂", students' talk, School on Exotic Superconductivity of Cargèse, 2022

- Contributed talks**
- "Fingerprints of amplitude and phase superconducting collective modes in THz two-dimensional coherent spectroscopy", "Photoinduced Phase Transitions and Cooperative Phenomena (PIPT)" conference, Nijmegen, 2024
 - "Thz driven two-plasmon excitations in superconducting cuprates: from the single-layer to the bilayer case", "New Generation in Strongly Correlated Electron Systems (NGSCES)" conference, Lido di Fermo, 2023
 - "Thz driven two-plasmon excitations in superconducting cuprates: from the single-layer to the bilayer case", "CMD30-FisMat" conference, Milano, 2023

- Posters**
- My poster "Manipulating Two-Plasmon Excitations in Superconducting Cuprates: from the Single to the Bilayer Case" has been presented in the following conferences:
- "Ultrafast Phenomena in Cooperative Systems GRC", Barga, 2024
- My poster "Contribution of Collective Excitations to Third Harmonic Generation in Superconducting MgB₂" has been presented in the following conferences/summer schools:
- "Low-Energy Electrodynamics in Solids", Sankt Pölten, 2023
 - "Condensed Matter Theory at Brixen (CMT@Brixen)", Bressanone, 2023
 - "Strongly Correlated Matter: from Quantum Criticality to Flat Bands", International Centre for Theoretical Physics (ICTP), Trieste, 2022
 - "Exosup2022: School on Exotic Superconductivity", Institut d'Études Scientifiques de Cargèse (IESC), Cargèse, 2022
 - "From optical to THz control of materials Faraday Discussion", Royal Society of Chemistry, London (online), 2022

- Schools**
- I have been admitted and participated to the following schools:
- Autumn School on Correlated Electrons, Juelich, autumn 2024
 - School on Exotic Superconductivity, Cargèse, summer 2022

Referee experience National Science Review, Physical Review X

- Tutoring experience**
- "Meccanica" for the Bachelor's Degree in Physics, Sapienza University of Rome, academic year 2023/24
 - "Fisica" for the Bachelor's Degree in Biotechnologie Agro-Industriali, Sapienza University of Rome, academic year 2022/23

- Scientific visits**
- September 2023: Kavli Institute for Theoretical Physics (Santa Barbara, USA), program "Quantum Materials With and Without Quasiparticles"

EDUCATION

October 2019 - July 2021 **Master's Degree in Physics**

Physics Department, Sapienza University of Rome

Thesis title: "Study of nonlinear THz response in multiband superconductors", supervisor Prof. Lara Benfatto

Grade: 110/110 cum laude

November 2019 - November 2021 Master's student at Sapienza School for Advanced Studies (SSAS)

September 2020 Annual SSAS research project: "Role of electron-phonon interaction in graphene photoemission spectra: a many-body approach", supervisor prof. Lara Benfatto

October 2016 - July 2019 **Bachelor's Degree in Physics**

Physics Department, University of Trieste

Thesis title: "Studio delle funzioni di risposta lineare di un metallo attraverso il metodo variazionale di Gutzwiller", supervisors Prof. Michele Fabrizio and Prof. Fulvio Parmigiani

Grade: 110/110 cum laude

October 2016 - July 2019 Bachelor's student at Collegio Universitario "Luciano Fonda"

September 2018 - October 2018 Traineeship at the synchrotron facility Elettra in Trieste, supervisor Prof. Fulvio Parmigiani

September 2011 - July 2016 **High school diploma**

Liceo Scientifico "Filippo Masci" Chieti

Grade: 100/100 cum laude

September 2015 Summer schools in Physics at University of Udine and University of Trieste

September 2014 Summer school in Physics at Gran Sasso National Laboratory

FUNDING, PRIZES AND AWARDS

2023 Ermenegildo Zegna Founder's Scholarship (€4000) for participation to KITP Program "Quantum Materials With and Without Quasiparticles"

2023 Best poster prize at the conference LEES 2023

2019 Sapienza scholarship "Wanted the Best"

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	B2
International English Language Testing System (IELTS)					

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Computer skills – \LaTeX , Python and FORTRAN programming languages
 – Microsoft Office suite
 – Adobe Photoshop

PUBLICATIONS

- [1] Kota Katsumi, Jacopo Fiore, Mattia Udina, Ralph Romero, David Barbalas, John Jesudasan, Pratap Raychaudhuri, Goetz Seibold, Lara Benfatto, and N. P. Armitage. “Revealing Novel Aspects of Light-Matter Coupling by Terahertz Two-Dimensional Coherent Spectroscopy: The Case of the Amplitude Mode in Superconductors”. In: *Phys. Rev. Lett.* 132 (25 June 2024), p. 256903. URL: <https://link.aps.org/doi/10.1103/PhysRevLett.132.256903>.
- [2] Niccolò Sellati, Jacopo Fiore, Claudio Castellani, and Lara Benfatto. “Optical Absorption in Tilted Geometries as an Indirect Measurement of Longitudinal Plasma Waves in Layered Cuprates”. In: *Nanomaterials* 14.12 (2024). URL: <https://www.mdpi.com/2079-4991/14/12/1021>.
- [3] Jacopo Fiore, Niccolò Sellati, Francesco Gabriele, Claudio Castellani, Goetz Seibold, Mattia Udina, and Lara Benfatto. “Investigating Josephson plasmons in layered cuprates via nonlinear terahertz spectroscopy”. In: *Phys. Rev. B* 110 (6 Aug. 2024), p. L060504. URL: <https://link.aps.org/doi/10.1103/PhysRevB.110.L060504>.
- [4] Jacopo Fiore, Mattia Udina, Marco Marciari, Goetz Seibold, and Lara Benfatto. “Contribution of collective excitations to third harmonic generation in two-band superconductors: The case of MgB_2 ”. In: *Phys. Rev. B* 106 (9 Sept. 2022), p. 094515. URL: <https://link.aps.org/doi/10.1103/PhysRevB.106.094515>.
- [5] Mattia Udina, Jacopo Fiore, Tommaso Cea, Claudio Castellani, Goetz Seibold, and Lara Benfatto. “THz non-linear optical response in cuprates: predominance of the BCS response over the Higgs mode”. In: *Faraday Discuss.* 237 (0 2022), pp. 168–185. URL: <https://pubs.rsc.org/en/content/articlelanding/2022/FD/D2FD00016D>.