


# Daniele Battesimo Provenzano

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## EDUCATION

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### Scuola Normale Superiore

Pisa, Italy

*Ph.D. in Physics: Electromagnetics and Metamaterials;*

*Nov. 2020 – Sept. 2025*

*Diploma (M.Sc.) in Physics of Matter; 100/100 cum Laude*

*Oct. 2018 – Sept. 2020*

### University of Pisa

Pisa, Italy

*M.Phil. in Condensed Matter Physics; 110/110 cum Laude*

*Sept. 2018 – Oct. 2020*

### Scuola Superiore di Catania

Catania, Italy

*Diploma (M.Sc.) in Physics; 70/70 cum Laude*

*Oct. 2015 – Sept. 2018*

### University of Catania

Catania, Italy

*B.Sc. in Physics; 110/110 cum Laude*

*Oct. 2015 – July 2018*

## ADDITIONAL COURSES

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**School for Forensic Police Inspectors:** Won a national open competitive exam and underwent a six-month training program in Forensics during the Ph.D. I was taught Italian and international law, as well as the experimental techniques used by the scientific police department, particularly in forensic ballistics. (June 2023 - Gen. 2024)

**“24 ECTS for Teaching”:** Took four courses in Pedagogy, Psychology, Anthropology and Teaching Methods, which constitute a prerequisite for teaching in Italy. (Summer 2022)

## TEACHING EXPERIENCE

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### Scuola Normale Superiore

Pisa, Italy

*Lecturer, Teaching Assistant and Examiner*

- **“Physics School in Pisa”:** Prepared and gave 7 four-hour lectures about topics in Classical and Modern Physics and led the relative problem-solving sessions, examined and graded 200 applicants per year through both written and oral exams. (2019 - 2025)
- **“University Orientation Courses”:** Designed and delivered 12 hours of interactive lessons on Problem-Solving Techniques, aimed at 260 handpicked high school students. (June - July 2024)
- **Classical Mechanics and Thermodynamics:** Led 30 hours of problem-solving sessions for the course, attended by university freshmen. (Fall 2020 - Spring 2021)

### Italian Association for the Teaching of Physics (AIF)

Italy

*Lecturer, Tutor and Examiner*

- **“One step away from IPhO”:** Prepared and gave 8 four-hour lectures on Celestial Mechanics, Electromagnetism and Thermodynamics, aimed at the top 15 Italian students preparing to compete in the International Physics Olympiad. Selected the team members taking part in IPhO and EuPhO through theoretical and experimental examinations. (May 2019/23/24/25)
- **Physics Olympiad Summer School:** Led 8 hours of problem-solving sessions on Orbital Mechanics, Estimation Problems and Dimensional Analysis, aimed at 20 handpicked students taking part in the Physics Olympiad. (Aug. 2019)

### Scuola Superiore di Catania

Catania, Italy

*Lecturer, Tutor and Examiner*

- **“Training camp for the Physics Olympiad”:** Prepared and gave lectures about Electrostatics, Problem-Solving Techniques and Fluid Dynamics, aimed at 20 handpicked students taking part in the national finals of the Physics Olympiad. Led the relative problem-solving sessions, prepared and graded the final theoretical competition. (Mar. 2023/24/25)

- **“Training camp for the Math Olympiad”:** Led two problem-solving sessions focused on Combinatorics and Game Theory, aimed at 25 handpicked students taking part in the national finals of the Math Olympiad. (May 2016 and 2017)

## PROJECTS RELATED TO PHYSICS EDUCATION

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### “Problem-Solving Techniques in Physics, with Original Problems and Debunked Myths”

- In my free time, I am writing a textbook on problem-solving techniques, aimed at students taking part in Physics Olympiads and university freshmen. It will be specifically designed to debunk some common myths and correct many misconceptions often found in traditional teaching and textbooks. So far, I have written about 200 pages. I plan to finish by 2027.

### Team Physics Competition | [Italian website](#)

- In 2023, after four years of preparation, my university colleagues and I gave birth to the first-ever Physics Team Competition, an annual event consisting of several stages held all across Italy and aimed at high school students. Every year, approximately 600 teams from all corners of Italy take part in the competition. The top 20 teams receive an invitation to the national finals held in Senigallia, where the competition unfolds in person, resembling a sporting event. My primary contribution involves creating, refining and selecting the theoretical problems that comprise the competition.

### Physics School in Pisa | [Italian website](#)

- Since 2018, a dedicated group of physics students from Scuola Normale Superiore has been organizing an annual one-week physics school for 24 handpicked Italian high school students. The aim is to prepare them for the Physics Olympiad while providing an introduction to bachelor studies, both in the classroom and the laboratory. In 2019, the project won the “Didactics of Physics” prize, presented annually by the Italian Society of Physics. After enrolling at SNS, I joined the admission committee, evaluating candidates’ abilities through both written and oral examinations. I delivered lectures and problem-solving sessions on Fluid Dynamics, Celestial Mechanics, Special Relativity and Modern Physics throughout seven editions (2019 to 2025). Lecture notes and recordings are available on the website, in Italian.

### Italian Physics Olympiad | [Italian website](#)

- The Italian Physics Olympiad has been organized since 1987 by the Italian Association for the Teaching of Physics (AIF). Each year, two teams composed of the best Italian students are trained in preparation for IPhO and EuPhO. In 2019, I joined the training courses organized by AIF as a trainer. Since then, my students have won a total of 2 gold medals, 15 silver medals and 20 bronze medals at IPhO and EuPhO. After five years of collaboration, I earned a spot on the national committee that organizes the Olympics. Our main tasks include creating theoretical and experimental problems for the multiple stages of the competition and evaluating all the contestants.

## CERTIFICATIONS AND SKILLS

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**Languages:** English (C1, 195/210, certificated by Cambridge English), French (B1, certificated by Scuola Normale Superiore).

**Major computer skills:** MATLAB, Mathematica, L<sup>A</sup>T<sub>E</sub>X, Git, HTML, video editing SWs.

**Others:** First Aid (practical knowledge, certificated by the Italian Police).

## AWARDS & ACHIEVEMENTS

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**Italy Team Leader at EuPhO 2025:** coached and lead the Italian team at the European Physics Olympiad, held in Sofia, Bulgaria. (June 2025)

**First place in the national open competitive exam for Ballistic Technical Inspectors:** Ranked first at the decennial national open competitive exam to become a ballistic expert and join the Italian Police forensic department. (Apr. 2023)

**Gold Medal at the 53<sup>rd</sup> Rudolf Ortvy International Competition in Physics.** (Feb. 2023)

**Absolute Winner of the 50<sup>th</sup> Rudolf Ortvy International Competition in Physics.** (Dec. 2019)

**SNS Scholarship:** After passing the selection process to enroll at Scuola Normale Superiore as a master's student, I was awarded free room and board, as well as a monthly stipend. (Oct. 2018 – Sept. 2020)

**SSC Scholarship:** After passing the selections to join Scuola Superiore di Catania as an undergraduate student, I was awarded free room and board. (Oct. 2015 – Sept. 2018)

## PUBLICATIONS

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Daniele B. Provenzano and Andrea Stefanini, *Deflation time of soap bubbles*, under review on the American Journal of Physics.

Daniele B. Provenzano and Giuseppe C. la Rocca, [Bulk and surface modes in a one-dimensional gyro-uniaxial photonic crystal](#), Phys. Rev. A **110**, 033514 (2024).

Daniele B. Provenzano and Giuseppe C. la Rocca, [Interface mode between gyroelectric and hyperbolic media](#), J. Opt. Soc. Am. B **40**, 172 (2023).

## HOBBIES

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DIY, Gardening, Football, Jogging, Bass guitar, 8- and 9-ball, Shooting and editing short movies.