



Daniele Francescone

Email address: daniele.francescone@uniroma1.it

● EDUCATION

01/11/2021 – CURRENT

PhD in particle accelerators physics

Sapienza, University of Rome, Rome, Italy.

Supervisors

Prof.ssa.Enrica Chiadroni, Sapienza University of Rome, Italy

Mail: enrica.chiadroni@uniroma1.it

Dr. Giancarlo Gatti, Centro de Laseres Pulsados Ultraintenos (CLPU), Salamanca, Spagna

Mail: ggatti@clpu.es

Master in nanotechnology engineering

Thesis title: Synchrotron light sources as advanced instrumentation for nanoscience: design study of a novel injector

Vote : 110/110L

Supervisors

Dr. Paolo Craievich, Paul Scherrer Institut (PSI), Switzerland

Mail: paolo.craievich@psi.ch

Prof. Palumbo Luigi, Sapienza University of Rome, Italy

Mail: luigi.palumbo@uniroma1.it

Bachelor degree in Electronics Engineering

Thesis title: Electron beam wakefield expansion in hybrid dielectric-coated metallic waveguide modes

Vote : 92/110L

Supervisors

Dr. Luca Ficcadenti, Sapienza University of Rome, Italy

Mail: luca.ficcadenti@uniroma1.it

Prof. Palumbo Luigi, Sapienza University of Rome, Italy

Mail: luigi.palumbo@uniroma1.it

● WORK EXPERIENCE

01/10/2023 – 01/04/2024 Salamanca, Spain

VISITING RESEARCHER CENTRO DE LASERES PULSADOS ULTRAIINTENSOS CLPU

Period of doctoral research abroad, during which I conducted simulations, instrument calibration, and setting for an experimental campaign on laser-plasma interaction and detection of the emitted radiation

30/06/2019 – 29/11/2019 Villigen, Switzerland

TRAINEESHIP PAUL SCHERRER INSTITUTE PSI

Experience as a summer student that allowed me to work on particle accelerators, taking part in a project that aimed to upgrade the SLS synchrotron. My job involved working on beam dynamics and radio frequency system

01/10/2023 – 01/01/2024 Rome, Italy

UNIVERSITY TEACHING ASSISTANT LECTURE ASSISTANT

- Course of Physics II (Electromagnetism), for Electrical engineering students held by Professor E.Chiadroni. *Sapienza, University of Rome. 2023/2024 - (Codice BT-B2 14/2023, Prot. n. 2286 Rep. n. 267 del 14/07/2023) -*
- Course of Physics II (Electromagnetism), for Electrical engineering students held by Professor E.Chiadroni. *Sapienza, University of Rome. 2022/2023 - (Rep n. 428/2022 Prot n. 2288 del 07/07/2022)*
- Course of Physics I (Mechanics and Thermodynamics) for Civili engineering students, held by Professor A.Sinibaldi. *Sapienza, University of Rome. - 2021/2022 - (Prot. 3134 del 6/12/2021Rep. 473/2021)*

- Laborat/ory assistant (Radiofrequency laboratory) for electronic engineering students, held by Professor A. Mostacci. *Sapienza, University of Rome*. 2022/2023 - Codice ICE 34/2021 Prct. n.222s del 03/10/22
- Course of Physics I (Mechanics and Thermodynamics) for computer engineering students, held by Professor M. Petrarca. *Sapienza, University of Rome*. - (Bando n. 6/2022, Prot. n. 1582 del 27 ottobre 2022)

PROJECTS

2015 - 2016

Sapienza corse

I collaborated on a university project called "Sapienza Corse" in designing a racing car for participation in the FORMULA SAE international competition.

Link <http://www.sapienzacorse.it/pages/cars&teams.php>

PUBLICATIONS

2023

[Beam dynamics optimization of EuPRAXIA@SPARC LAB RF injector](#)

G.J. Silvi, A.L. Bacci, M. Carillo, E. Chiadroni, L. Faillace et al.

[SAFEST: a compact C-band linear accelerator for VHEE-FLASH radiotherapy](#)

Luigi Palumbo, Alessandro Gallo, Alessandro Vannozzi, Alessio Sarti, Andrea Mostacci et al.

2023

[Beam dynamics optimization of a modular and versatile linear accelerator-based system exploiting C-Band technology for VHEE FLASH Applications](#)

Luigi Faillace, Alessandro Gallo, Alessandro Vannozzi, Alessio Sarti, Andrea Mostacci et al.

[Advanced Studies for the Dynamics of High Brightness Electron Beams with the Code MILES](#)

F. Bosco, M. Behtouei, O. Camacho et al

[Beam dynamics optimization for high gradient beam driven plasma wakefield acceleration at SPARC-LAB](#)

Write here the description...

M. Carillo, D. Alesini, M.P. Anania, M. Behtouei et al.

2023

[Proposal of a VHEE Linac for FLASH radiotherapy](#)

Write here the description...

L. Giuliano, F. Bosco, M. Carillo, Giuseppe Cirrone, D. De Arcangelis et al

2018

[Longitudinal and Transverse Wakefields Simulations and Studies in Dielectric-Coated Circular Waveguides](#)

Write here the description...

Luca Ficcadenti, Giovanni Castorina, Daniele Francescone et al

2023

[On the Betatron radiation in cylindrically symmetric plasma-ion channels](#)

Daniele Francescone, Alessandro Cianchi, Andrea Mostacci, Andrea Rossi, Enrica Chiadroni et al.

● **CONFERENCES AND SEMINARS**

17/09/2023 – 23/09/2023 Elba island, Italy, Poster Contribution

6th European Advanced Accelerator Concept workshop EAAC 2023

International conference on accelerators based on new acceleration techniques, participating in the poster session with a topic on betatron radiation

11/09/2023 – 15/09/2023 Salerno, Italy - Oral Contribution in a parallel section

109° National congress "Italian Society of Physics" SIF

07/05/2023 – 12/05/2023 Venice, Italy - Poster contribution

14th International Particle Accelerator Conference (IPAC)

IPAC is the main international event for the worldwide particle accelerator field and industry.

18/09/2022 – 24/09/2022 Elba island, Italy - Poster contribution

4th European network for novel accelerators (Euronnaac)

International conference on accelerators based on new acceleration techniques, participating in the poster session with a topic on wakefield acceleration by capillary dielectric

● **COMPUTER SKILLS**

Calculation codes

Matlab - Intermediate level

Python - Intermediate level

Mathematica - Intermediate level

Simulation codes

A Space Charge Tracking Algorithm (ASTRA): beam dynamics code

CST Studio Suite: simulation software for electromagnetic field problems

SMILEI: simulation code for plasma physics

Zemax Optic Studio: program used for designing and simulating optical systems

● **AFFILIATION**

2021 – CURRENT

Istituto Nazionale di Fisica Nucleare (INFN)

● **LANGUAGES**

Italian

Mother tongue

English

Intermediate level

Spanish

Intermediate level

● **COURSES AND STAGES**

08/10/2023 – 10/10/2023

4th Smilei training workshop

Workshop on a Smilei pic code for plasma simulation
ELI beamlines, Prague.

27/07/2023 – 02/08/2023

Course of International School of Particle Accelerators

Summer school on novel acceleration schemes and enabling technologies.
Ettore Majorana Institute, Erice, Italy

05/02/2023 – 10/02/2023

Bad Honnef Physics Schools

Course on plasma acceleration
Physikzentrum Bad Honnef, Germany

06/2022 – 07/2022

Beam instabilities in circular particle accelerators

Prof. Mostacci Andrea, Sapienza University of Rome, Italy
Prof. Migliorati Mauro, Sapienza University of Rome, Italy
Prof. Metral Elias, Cern, Geneva, Switzerland

02/2022 – 06/2022

Physics of High Brilliance Accelerators

Professor M. Ferrario, Sapienza University of Rome
Rome, Italy.

01/2022 – 02/2022

Joint Universities Accelerator School (JUAS)

Winter school on Particle Accelerator, European Scientific Institute
Archamps, France.