



Study Plan

☐ 1st YEAR ☒ 2nd YEAR ☐ 3rd YEAR

NAME: Saba

SURNAME: Imtiaz

CYCLE: 39th

A.Y.: 2025

CURRICULUM Electronics

TUTOR: Dr Paolo Soffitta , Dr Fabio Muleri , Dr Alessandro Di Marco

- COURSES¹

1. Advanced Electronics Sensing Devices
2. Gaseous Dectector for Experimental Particle Physics
3. Machine Learning Programming in Physics
4. Design of Readout Integrated Circuits for Particle Detector
5. New Technology with Chernkov Telescope

- CONFERENCES, SEMINARS, SCHOOLS²

- | | |
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| 1. <u>The XII Geant4 International School-Romania</u> | 5. <u>2nd International Conference on Physics Horizons and Multidiscipilanny Science -Pakistan</u> |
| 2. <u>PHD Retreat at LNGS Italy</u> | |
| 3. <u>Frontiers of X-ray polarimetry FixP,Academy, Italy</u> | |
| 4. <u>Workshop Celebrating Enrico Cost 80s Birthday, Italy</u> | 6. <u>INAF/IAPS Seminars</u> |

- ADDITIONAL TRANSVERSAL / SOFT SKILLS COURSES

1. Front End Electronics and DAQ System for Radiation Dectection HE5
2. Data Analysis with Python, coursera ,online course
3. Italian Language Course Basic
4.

¹ Minimum of 10 CFU preferably in the first two years of the PhD Programme. N.B. If the course is not included in the Official list, please attach detailed course program, attendance and profit in terms of credit must be certified by a designed committee in the specific Curriculum Council

- STAYS ABROAD – STAGE – INTERNSHIPS³

1. University of Bonn Germany Period Abroad for Research Work
2. _____
3. _____
4. _____

- BRIEF DESCRIPTION OF THE PLANNED RESEARCH ACTIVITY DURING THE CURRET YEAR

In the second year, I focused on detailed Monte Carlo simulations within the HypeX project using GEANT4 to model the GridPix detector's response to polarized radiation under different conditions, gas mixture, pressure/absorption/ drift-range thickness. In parallel, I experimental analyzed data acquired with the Timepix3 ASIC, the investigated detector's response to polarized and unpolarized radiation, charge accumulation and gain variations. These combined efforts simulation and data analysis enhances the GridPix performance and advance X ray polarimetry techniques.

Data, May 8, 2025

Firma _____



Visto, il tutor



Paolo Soffi-He

³ Attendance may be recognized, up to a maximum of 3 extra CFU.