

Pierre Gérard Ortega

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Education

PhD Student in Particle Physics <i>Université libre de Bruxelles</i> , Brussels, Belgium – Grant: PIT ProtherWal, No. 7289 (Walloon Region)	2025 –
Teaching qualification for upper secondary education (AESS) <i>Université libre de Bruxelles</i> , Brussels, Belgium	2021 – 2024
Master in Physics <i>Université libre de Bruxelles</i> , Brussels, Belgium – Master thesis: "Study of the charge collection efficiency in air vented ionization chambers in UHDR proton beams" – Research Project: "Dosimetry in proton therapy"	2021 – 2024
Bachelor in Physics <i>Université libre de Bruxelles</i> , Brussels, Belgium	2017 – 2022
High School (CESS) <i>Athénée Royal Jean Absil</i> , Brussels, Belgium	2011 – 2017

Publications

- P. Gérard Ortega**, G. De Lentdecker, Q. Flandroy, J. Nys
Charge Collection Efficiency in Air-Vented Plane-Parallel Ionisation Chambers at Ultra-High Dose Rates: A Self-Consistent Garfield++ Monte Carlo Model Including Space-Charge Effects and Ion Recombination
arXiv eprint, 2026. [arXiv:2606.24384](https://arxiv.org/abs/2606.24384)
- I. Jayam, G. De Lentdecker, Q. Flandroy, N. Gérard, **P. Gérard**, J. Nys
Collection Efficiency of Large-Surface Plane-Parallel Ionization Chamber Used for Dose Monitoring in FLASH Non-Uniform Pulsed Proton Beam
Int. J. Part. Ther., 2024. [doi:10.1016/j.ijpt.2024.100237](https://doi.org/10.1016/j.ijpt.2024.100237)

Skills & Languages

Languages: French (native), Spanish (native), English (intermediate), Dutch (basic)

Programming languages and tools: Python (advanced), C++ (intermediate), Unix (intermediate), Garfield++ (advanced), ROOT (basic), LaTeX (advanced)

Software Contributions

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| Active contributor , <i>Garfield++</i> (CERN) toolkit for simulation of particle detectors in gaseous media. Contributions include ion-ion recombination model and space-charge effects; see arXiv:2606.24384 | 2025 – |
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Teaching

Tutor, *DRD1 Gaseous Detectors Simulation School* (DRD1 collaboration, CERN/INFN), hands-on exercises on gaseous detector simulation, University of Bari, Italy May 2026

Conferences

Poster presentation (*author, attended*) Dec 2025
Flash Radiotherapy and Particle Therapy (FRPT 2025), Prague, Czech Republic

Poster presentation (*author, attended*) Dec 2024
Flash Radiotherapy and Particle Therapy (FRPT 2024), Rome, Italy

Poster presentation (*co-author, online*) Jun 2024
Particle Therapy Co-Operative Group (PTCOG 62), Singapore

Educational and outreach activities

Participant in the *Autumn School on Science Communication and Outreach*, a two-day training program on science mediation (workshops, public communication, and outreach strategies) at Université libre de Bruxelles (ULB) Nov 2025

Science facilitator for outreach workshops aimed at secondary school students at the *Physics Experimentarium* (ULB) Mar 2023

Scientific proofreader for the French translation of the popular children's book *Les mystères de l'univers* by Jan Paul Schutten (translated by Maurice Lomré, published at *L'école des loisirs*) Sep 2020