EURO-LABS Newsletter

ISSUE No.5 | DECEMBER 2025

EURO-LABS 4th Annual Meeting, Ljubljana

Training Workshop on Coulomb Excitation, Florence

EDITORIAL

M. COLONNA, INFN

CONTENT

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

EDITORIAL

M. Colonna
For the EURO-LABS Team

Dear readers,

We are pleased to share the fifth edition of the EURO-LABS Newsletter. This issue comes after the completion of the third year of the project, marked by the Fourth Annual Meeting (FAME 2025), which was held in Ljubljana, Slovenia, from September 29th to October 1st. Once again, the Annual Meeting provided a welcome opportunity to take stock of our progress and reflect continuing to strengthening the collaboration between our communities - Nuclear Physics, High-Energy Accelerators, and High-Energy Detectors, also with a view to possible new joint projects. More details on contents and outcomes of the meeting can be found in the first article of this Newsletter. Moreover, this edition highlights several key results and activities that, having grown thanks to the support of EURO-LABS, will surely continue to develop beyond the end of the project, with a significant impact on scientific research, data management and also societal applications.

Among the variety of Transnational Access (TA) offered by the EURO-LABS facilities, applied research also plays a complementary role. In this context, the "Applications" task of Work Package 3 (WP3) – *Access to Research Infrastructures for Accelerators* – highlights how electron-beam technology is driving advanced solutions in areas such as materials development, environmental protection, food safety, and healthcare.

In this context, the second article in this issue illustrates the leading contribution of the Institute of Nuclear Chemistry and Technology (INCT – Warsaw, Poland) in showcasing the versatility of electron-beam (EB) applications. Thanks to EURO-LABS support, researchers have successfully carried out a broad range of studies at the INCT-RAPID electron-beam facility, clearly demonstrating the capacity of electron accelerators to spur innovation and improve quality of life.

A major achievement of EURO-LABS is the establishment of the Theo4Exp Virtual Access facility, designed to offer user-friendly access to cutting-edge theoretical tools, software, and datasets relevant to the low-energy nuclear physics community (WP2). Our third article reports on a recent workshop held at ECT* in Trento (Italy), which introduced participants to Theo4Exp and its practical applications — an effort well worth continuing beyond the lifetime of EURO-LABS.

EURO-LABS is also actively promoting best practices in Open Science. Within this framework, the task on Open Science and Data (WP5) aims to equip the EURO-LABS community with harmonised, FAIR-compliant (Findable, Accessible, Interoperable, Reusable) methods for sharing scientific outputs. Its goals include strengthening reproducibility, supporting open scientific practices, and encouraging the reuse of data across collaborations. A central element is the creation of a tailored dataset catalogue for EURO-LABS Research Infrastructures (RIs) involved in nuclear physics experiments. The fourth article in this issue presents the first release of the openNP catalogue, now accessible at https://opennp.in2p3.fr

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EDITORIAL

Training the next generation of researchers is another cornerstone of EURO-LABS. The final contribution in this Newsletter deals with the INTRANS service-improvement task of WP2, which aims to enhance expertise in nuclear structure methodologies across European Research Infrastructures. A key objective is to provide advanced, high-quality training that enables scientists to fully exploit the spectroscopic tools and data-analysis frameworks available through EURO-LABS. In this context, the article summarises the Florence Training Workshop on Coulomb Excitation, held from 27th to 30th January 2025.

The Newsletter concludes with a series of announcements regarding upcoming schools and events.

We hope you enjoy exploring these achievements and continue to follow EURO-LABS as we move ahead into our final project year.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Fourth Annual Meeting (FAME) of EURO-LABS

Igor Mandić and Marko Mikuz

The Fourth Annual Meeting (FAME) of EURO-LABS was hosted by the Jožef Stefan Institute in Ljubljana, Slovenia, from 29th September to 1st October 2025. Fifty-three participants from 13 countries attended in person, with additional attendees joining via Zoom.

On the morning of the first day, before the start of the meeting, a group of participants visited the Microanalytical Centre and the Reactor Infrastructure Centre of the Jožef Stefan Institute, located about 25 minutes bus ride from the venue, see Figures 1 and 2. The Microanalytical Centre operates a 2 MV tandem ion accelerator which is used for various experiments as well as for Particle Induced X-ray Emission (PIXE) and other analytical methods. The Institute also operates a 250 kW TRIGA research reactor. The tour included many details about reactor operation and gave a special opportunity of live view of the reactor core, submerged under 5 meters of water.

The meeting opened with introductory remarks by the scientific coordinator, who highlighted main achievements and also areas for improvement. This was followed by a keynote lecture by Prof. Karl Jakobs (University of Freiburg), chair of the ECFA forum preparing the 2026 update of the European Strategy for Particle Physics.

Figure 1. Reactor structure at the back, group photo on the platform and the view of the reactor core under 5 m of water.

Prof. Jakobs emphasized that maintaining Europe's leading role in particle physics after the LHC era construction of a new major machine in Europe is essential. Currently most of the discussion is focused on the Future Circular Collider (FCC). Whether the FCC begins as an electron–positron collider focused on precision Higgs studies (with a later upgrade to a 100 TeV proton–proton machine) or as a proton–proton collider from the start will depend on global developments.

Reports from WP4 followed, covering access to research infrastructures for detector development. Several test-beam experiments supported by EURO-LABS were presented, demonstrating the strong community interest. The detector-characterization task made significant progress, although some Access Units (AU) will remain unused due to the move of RBI to its new accelerator building. Irradiation facilities completed 86 projects in the first three years, providing 9,960 hours of beam time, with Low Gain Avalance Detectors (LGADs) being the most frequently tested detectors.

Figure 2. Visit to the Microanalytical center operating 2 MeV tandem accelerator.

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Presentations from WP2 then covered access to research infrastructure for nuclear physics. Task 2.1 (stable beams) remains highly active, with some facilities already using their full AU budgets. Task 2.2 (radioactive beams) also performed very well, delivering 23,000 AU across 194 projects. Task 2.3 presented the activities of neutron-beam facilities, followed by highlights from task 2.4, which supports interactions between theory and experiment. Its virtual-access platform is already widely used (more details on page 9-10 in this newsletter), with new features being added, and the task expects to use all allocated funds. The session concluded with the service-improvement report.

The first day ended with a poster session featuring ten excellent contributions. Participants discussed the results with the authors while enjoying the refreshment.

The second day began with an appealing invited lecture by Prof. Marco Durante (TU Darmstadt, GSI, FAIR) titled “Biomedical applications of nuclear physics: new perspectives, reviewing the status and outlook of radioactive ion-beam therapy”.

The morning session then focused on WP3 and WP5. WP3 provides TA to accelerator-related research infrastructures. Task 3.1 reported on HiRadMat at CERN, which delivers unique few microsecond long pulses of 440 GeV protons carrying 4.3 MJ of energy. Nine complex experiments were completed over three years, and demand remains high. Task 3.2 presented access to six accelerator-R&D technology facilities, some with multiple completed TA projects. Task 3.3 summarized electron and plasma beam activities at KIT (KARA and FLUTE), and task 3.4 reviewed projects at INCT-RAPID and CERN-CLEAR involving electron beams for industrial, chemical, medical, and R&D applications.

WP5 highlighted developments of the Machine Learning tool GEOFF - the generic optimization framework and frontend for particle accelerator controls - and also its applications in laser-plasma acceleration. Task 5.4 reported on training activities, including past and upcoming schools. WP5 presented the status of the openNP data catalogue, a platform being developed to centralize metadata for datasets generated by EURO-LABS research infrastructures.

After lunch, WP1 presented the overall project status and reported that all Deliverables and Milestones have been achieved, and the second periodic report has been submitted. Organizational issues were discussed in detail. The new EURO-LABS project officer then joined via Zoom to introduce himself and answer some questions. Parallel WP meetings continued after the coffee break, and the day concluded with the workshop dinner.

The final day opened with an invited lecture by Dr. Gregor Kramberger (JSI), head of the DRD3 collaboration, which currently includes 145 institutes and over 700 researchers. He presented the state of the art and future challenges in development of semiconductor sensors for charged-particle detection.

The following session featured the presentations from the Work Package leaders and two interesting presentations of posters selected for the internal “best poster award”.

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The meeting closed with final remarks from the scientific coordinator, who emphasized the demanding work ahead in the project's final year.

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Figure 3. FAME group photo.

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

From Labs to Society: EURO-LABS Innovative Applications of Electron Beam Technologies

Urszula Gryczka, Andrzej G. Chmielewski

Within EURO-LABS, the "Applications" task of Work Package 3 – "Access to Research Infrastructures for Accelerators"- underlines the significance of electron-beam (EB) technology in delivering advanced solutions for materials, air and water quality, food safety and healthcare.

The Institute of Nuclear Chemistry and Technology (INCT) is playing a leading role in demonstrating versatile applications of electron beam technologies. With the EURO-LABS support, scientists have completed a wide range of projects using the INCT-RAPID EB infrastructure, highlighting the potential of electron accelerators to support innovations for a better life.

Figure 4. Experimental site and scan horn of the electron beam accelerator ILU-6 at INCT.

The wide range of projects implemented within EURO-LABS indicates the unique flexibility of electron beam facilities in coping with the most pressing challenges. The projects were carried out at INCT by research teams representing: Ruder Bośkovic Institute, Croatia; University Paris Saclay, France; National Centre of Nuclear Sciences and Technologies CNSTN, Tunisia; University of Palermo, Italy; Instituto Superior Técnico, Universidade de Lisboa, Portugal; Institute of Chemical Physics, University of Latvia; Center of Biotechnology of Borj Cedria, Tunisia; Higher Institute for Biotechnology of Sidi Thabet, Tunisia.

Below are some examples, illustrating the importance of the EURO-LABS support for the development of novel applications of electron beam technology.

1. Materials Engineering and Advanced Functional Surfaces

- ***Crosslinking of Self-Assembled Fatty Acids on Copper by EB Irradiation***

This study investigated how thin organic layers of self-assembled fatty acids respond to electron irradiation. By inducing crosslinking within these films, researchers found new pathways for creating robust, chemically resistant coatings on metallic surfaces. These findings open possibilities for protective layers in microelectronics, corrosion protection, and catalytic interfaces.

- ***EB Irradiation for Polymer Crosslinking and Advanced Nanostructure Design***

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

This project focused on nanogel synthesis through radiation-induced crosslinking. EB provide a reagent-free method to form nanogels with controlled size, stability, and drug-loading properties. The results support future developments in targeted drug delivery demonstrating the value of EB processing.

2. Food Safety, Agriculture

- ***Bioactivity of Irradiated Foods by Low-Energy (300 keV) Electron Beam***

Researchers investigated whether low-energy EB treatment alters the nutritional, functional, or antioxidant properties of food products and food wastes.

- ***Low-Energy (300 keV) Electron Beam Irradiation of Plant-Based Animal Feed***

The work addressed microbial decontamination and potential improvements in digestibility of plant-based animal feed. Low-energy e-beams offer an energy-efficient alternative to thermal processing, supporting sustainable livestock production.

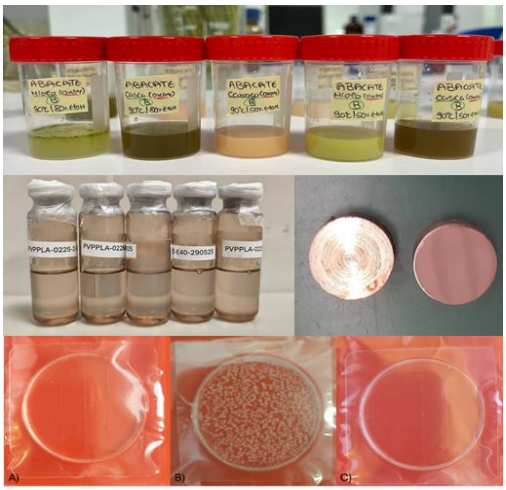

Figure 5. Experimental samples irradiated with electron beams at INCT.

- ***Enhancing Barley Resilience to Abiotic Stress via Physical Mutagenesis***

Electron irradiation was applied to induce controlled mutagenesis in barley seeds. By generating genetic variation without chemical agents, this method supports the development of crop varieties better suited to drought, heat, and other stressors—key challenges for agriculture under climate change.

3. Environmental Sustainability

EB innovative solutions for environment protection and waste valorization included:

- ***Converting of CO_2 and CH_4 using EB irradiation***

This study explored electron-beam-driven conversion of greenhouse gases into syngas—a valuable industrial feedstock. This process, driven by non-thermal electron-induced chemistry, demonstrates the potential of EB to support emissions reduction.

- ***Face Masks Recycling with Radiation Technologies***

In response to the vast accumulation of polymer-based waste generated during the COVID-19 pandemic, this project examined how e-beam irradiation can decontaminate, break down face mask materials. Radiation-assisted recycling could support circular use of plastics in a post-pandemic world.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Training in Theo4Exp platform

Manuela Rodríguez Gallardo, Gianluca Colò and Jerzy Dudek

The workshop "Theory Service for the Low Energy Nuclear Physics Community: A Hands-on Workshop" gathered at ECT* (Trento, Italy) around 40 participants, mostly experimentalists but including theorists as well, with a large majority of young students and post-docs.

The main focus of the workshop was the introduction and practical use of Theo4Exp, the recently launched virtual-access facility under EURO-LABS. Theo4Exp aims at providing user-friendly access to state-of-the-art theoretical calculations, software tools, and datasets of interest for the low energy nuclear physics community along with expert support.

The workshop was opened by a welcome address by the Director of ECT*, followed by a brief general introduction to the Theo4Exp platform and by a series of presentations introducing the specific objectives of the three installations and specific codes of Theo4Exp. These were followed by hands-on sessions, where participants explored the functionalities of the platform, including running nuclear structure and reaction codes, comparing theoretical predictions with experimental data, and learning about available resources for their future projects.

A key aspect of the workshop was precisely this interactive format, which emphasized the user participation. During the sessions, the participants had the opportunity to test the Theo4Exp tools on concrete examples, while the conveners provided explanations of the underlying models and codes, in a more detailed and focused manner than in usual meetings. Discussions were highly instructive and focused on both the technical aspects (easiness of use, computational performance, and interoperability) and the scientific ones (relevance of observables, precision of predictions, and future extensions).

The final part of every day sessions was devoted to gathering feedback from the participants. Several suggestions were made to improve the platform, such as the inclusion of new programs. There were also some funny ends of sessions! (see Figure 6)

Figure 6. End of one session with a funny kahoot poll.

RESULTS AND HIGHLIGHTS

The workshop successfully achieved its goals of training the community, promoting Theo4Exp, and fostering closer links between theory and experiments in low-energy nuclear physics. Key outcomes and highlights include the following points. **Community engagement**: Experimentalists and theorists worked side by side, which strengthened mutual understanding and fostered new collaborations.

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Training in Theo4Exp platform

Effective training: Participants gained practical experience with Theo4Exp, improving their ability to integrate theoretical predictions into their experimental research programs. **Constructive feedback**: The workshop generated valuable suggestions that will guide future improvements of Theo4Exp.

Figure 7. Photo of the workshop participants

In particular, suggestions from participants, regarding usability, available datasets, and outreach were positive, and the possibility for experimentalists to gather more precise information about theory than in usual meetings, was strongly appreciated. Also, some constructive remarks about the hands-on sessions were elaborated. Moreover, theorists have been encouraged to (a) enlarge the platform, if possible, (b) test it also for MSc courses etc., (c) propose a new workshop in e.g. two years. **Support for young researchers**: The hands-on nature of the event provided an accessible entry point for students and early-career scientists.

Future impact: By facilitating access to cutting-edge theoretical tools, Theo4Exp is expected to improve the planning, interpretation, and scientific output of nuclear physics experiments across Europe and beyond.

In summary, the workshop was highly productive, and the Theo4Exp initiative was positively received by the community. The event laid a solid foundation for the continued development and wider adoption of the facility, ensuring long-term benefits for nuclear physics research.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Release of the First Version of the openNP Catalogue

Quentin Fable, Antoine Lemasson and Adrien Matta

The objective of the EURO-LABS task on **Open Science and Data** (Work Package 5.2) is to provide the nuclear physics community with the tools required to share scientific outputs in a harmonised and FAIR-compliant manner (Findable, Accessible, Interoperable and Reusable). Its focus is on improving reproducibility, supporting open science practices, and encouraging data re-use across collaborations. A core component is the development of a dataset catalogue designed for the needs of EURO-LABS Research Infrastructures.

The first version of the **openNP catalogue** is now available at https://opennp.in2p3.fr . The service is hosted at the CC-IN2P3 (IN2P3/CNRS) computing center located in Lyon, France.
openNP is a web-based service offering a centralised and FAIR-compliant metadata catalogue for nuclear physics datasets.

Figure 8. https://opennp.in2p3.fr
openNP landing page.

Researchers can register and reference datasets using **structured metadata** and explore datasets through user-friendly search interfaces. More importantly, the catalogue does not host the data themselves: data remain preserved at the producing Research Infrastructures (Ris) according to their own policies, while openNP serves as a **trusted discovery portal** enabling visibility, accessibility and reuse. A standardised workflow for metadata deposition is provided, continuously refined based on user feedback and aligned with the practices of nuclear physics experiments.

The catalogue is built on the **InvenioRDM framework**, an open-source platform maintained by CERN (Zenodo) and developed by major research institutions. InvenioRDM offers an **extensible metadata model** aligned with the DataCite schema and supports **persistent identifiers** (DOIs), **cross-linked records**, and autocompleted metadata fields (e.g. ORCID, ROR). Integration with **OpenSearch** provides advanced indexing and semantic search capabilities, with modular user interfaces and a REpresentational State Transfer (REST) application programming interface (API) for programmatic access.

In openNP, each dataset is represented as a **versioned** and **self-contained metadata record**. Content is organised into **communities**, a core feature of InvenioRDM that enables groups of users to share roles, responsibilities and curation workflows tailored to their respective RIs. Authentication is provided through the **INDIGO IAM identity management service**, also deployed within EURO-LABS WP5.2.

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Release of the First Version of the openNP Catalogue

This system delivers Single Sign-On with institutional identity providers and ensures secure, federated access compatible with emerging services in the European Open Science Cloud (EOSC) ecosystem.

As a proof of concept, a complete dataset from the **e793s experiment** performed at GANIL has been integrated into openNP. This experiment, combining the VAMOS++, AGATA and MUGAST apparata, illustrates the complexity of modern nuclear physics setups, involving multi-instrument acquisition and multiple stages of data processing.

Three interconnected records have been published:

1. **Unprocessed experimental data**
2. **Processed data** released in open access
3. **Analysis software** used to process the data

Using DataCite metadata relations, these records were cross-linked to form a coherent, navigable chain from raw data to publication, demonstrating openNP's ability to document the full lifecycle of a nuclear physics experiment.

Following the first release, efforts are now directed toward consolidation, long-term sustainability and expanded capabilities.

In response to a call for contributions, initial contact points have been identified within candidate laboratories, and a **governance board** is currently being established. Its responsibilities include strategic oversight of the catalogue, policies for metadata curation and quality assurance, ensuring alignment with the FAIR principles, and defining priorities for future developments and service extensions. A transparent communication model, featuring regular roadmap updates and continuous consultation with EURO-LABS RIs, is planned to support long-term sustainability.

Several improvements are underway. The metadata schema is being tailored to integrate cross-domain nuclear physics elements, notably through the adoption of the standard proposed by the **NAPMIX (Nuclear, Astro and Particle Metadata Integration for eXperiments)** project. Another major enhancement will be the introduction of **sub-communities**, a feature of InvenioRDM v13. This will enable large collaborations (e.g. AGATA, NFS, NUSTAR) to operate within a parent RI community while maintaining their own curation processes, data management plans and policies.

More broadly, the openNP team is committed to facilitating dataset ingestion and curation by providing tools, libraries, APIs and data management strategies. Laboratories and collaborations interested in contributing to the evolution of openNP are warmly encouraged to get in touch and participate in its ongoing development.

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openNP catalog: https://opennp.in2p3.fr
More details about openNP:
https://doi.org/10.5281/zenodo.17020290

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Florence Training Workshop on Coulomb Excitation

Marco Rocchini, Adriana Nannini, Naomi Marchini

The INTRANS service-improvement activity within EURO-LABS is dedicated to enhancing expertise on nuclear-structure methods across European research infrastructures. A key element of this activity is to provide advanced, high-quality training that enables researchers to make the best use of the spectroscopic tools and data-analysis frameworks available at EURO-LABS facilities. Within this framework, the Florence Training Workshop on Coulomb Excitation was held in Florence (Italy) from 27th to 30th January 2025.

Coulomb excitation is one of the most powerful techniques for probing nuclear collectivity and measuring electromagnetic nuclear matrix elements. Through the purely electromagnetic interaction between beam and target, it can provide access to transition probabilities and spectroscopic quadrupole moments, allowing for investigating signatures of nuclear deformation and shape coexistence. Although the technique is conceptually simple, the data analysis requires the use of advanced software tools. The Florence workshop was designed precisely for Coulomb-excitation data analysis, combining lectures with extensive hands-on training.

The morning sessions of the workshop were devoted to a structured lecture program covering the essential theoretical and experimental bases of Coulomb excitation. The first set of lectures introduced the observables that can be extracted from Coulomb-excitation measurements and the relationships between transition strengths, nuclear collectivity, and deformation parameters. The lectures also examined the requirements of a typical Coulomb-excitation experiment, including the selection of target and beam, the detector specifics, and the combination with complementary measurements such as lifetime studies. Topics such as triaxiality, octupole collectivity, and shape coexistence were also covered, illustrating studies in which the technique plays a central role.

The afternoon sessions focused on practical work with the main tools used for the Coulomb-excitation data analysis. Participants were trained on the use of GOSIA, the standard least-squares code for the analysis of Coulomb-excitation experiments. Hands-on exercises guided them through the construction of input files, the simulation of counting rates, and the extraction of electromagnetic matrix elements.

Figure 9. Photo of the Florence Training Workshop on Coulomb Excitation.

A dedicated session introduced the code FRESCO (also available at the **Theo4Exp platform**), providing a complementary perspective on semiclassical reaction modeling. The combination of GOSIA and FRESCO aimed at illustrating to students not only operational tasks but also a broader

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understanding of the theoretical framework underlying the analysis.

The workshop was hosted by the INFN Division of Florence and the University of Florence. The organizing team included researchers actively involved in Coulomb-excitation experiments and analysis, ensuring a strong link between teaching and experimental practice. Participants attended from a wide range of European and non-European institutions, reflecting the growing interest in Coulomb-excitation methods for studies with both stable and radioactive-ion beams.

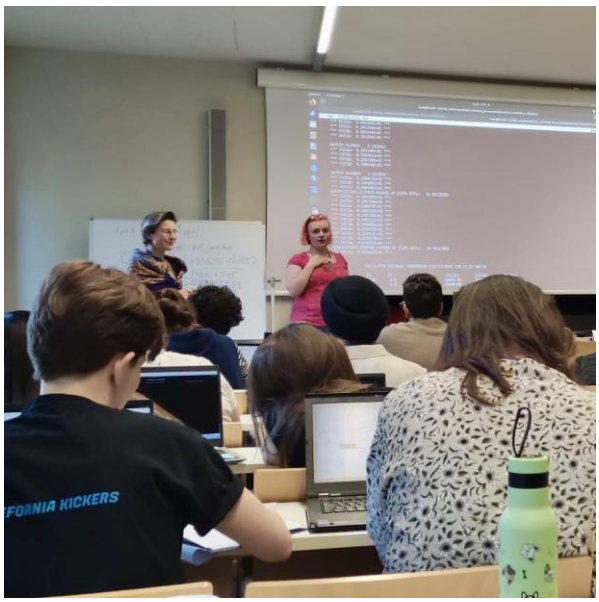

Figure 10. Hands-on GOSIA session by Katarzyna Wrzosek-Lipska (left) and Magda Zielinska (right).

Beyond technical training, one of the aims of the workshop was to foster a community of early-career researchers who will form the next generation of users of EURO-LABS infrastructures. The interactive nature of the hands-on sessions encouraged collaboration and discussion, helping participants build confidence in planning and analyzing their own Coulomb-excitation measurements.

The Florence workshop represented an important contribution to the broader mission of INTRANS. By strengthening the analytical capabilities of young researchers and spreading best practices across institutions, INTRANS supports the long-term quality and impact of nuclear structure experiments carried out in Europe. The skills acquired by the participants are expected to benefit future campaigns at facilities using both stable and radioactive beams, improving proposal preparation, experimental planning, and data-analysis.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

EURO-LABS School: Data Management and Advanced Training School on Collaborative Software Development Practices

Open Science is the practice of making research outputs such as data, software, publications, hardware, and infrastructures openly available to everyone. It promotes transparency, collaboration, and reproducibility in research, while enabling broader access to scientific knowledge for both researchers and the public.

For the physics community, Open Science represents a major opportunity to improve the management and use of the large datasets produced at accelerator facilities across Europe, and to strengthen international collaboration.

A central aspect of this effort is the adoption of **collaborative software development practices**, which are essential for building reliable, maintainable, and shareable scientific workflows.

Developing common data workflows that can be shared among European physics laboratories would represent a major step forward toward Open Science. The data produced in these facilities should follow the **FAIR principles** (Findable, Accessible, Interoperable, and Reusable) to ensure long-term preservation and future usability by the scientific community.

The goal of this **Advanced Training School** is to introduce these principles and to provide **hands-on experience with tools and methods that enable effective data management and collaborative software development** in a research context.

The School will take place from 2nd to 6th February 2026 at GANIL, Caen (France).

List of topics and lecturers:

The school will combine lectures with practical sessions covering modern tools and collaborative workflows:

- Hands-on Data Challenge - A. Matta (LPC Caen/CNRS) and J. Dudouet (IP2I Lyon/CNRS)
- GitLab - P. Davies (LPC Caen)
- Snakemake - A. Matta (LPC Caen/CNRS)
- Data Management - Q. Fable (GANIL)
- Reproducibility - C. Paxman (GANIL)

Participants will gain practical experience with software version control, workflow automation, and reproducible research environments - all key elements of collaborative development.

The school is open to PhD students, final year Master students, and early career postdoctoral researchers. A total of 25 to 30 participants will be selected based on applications.

Information and registration:

Email: dataschool2026@ganil.fr

Website: https://indico.in2p3.fr/event/37562/

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Third Advanced Training School on the Operation of Accelerators (ATSOA2026)

The **Third Advanced Training School on the Operation of Accelerators (ATSOA2026)** will take place from **20th to 24th April 2026 at CERN**, Geneva, Switzerland.

During this week-long programme, selected participants will gain valuable insight into the operation of high-energy accelerators through a combination of theoretical courses, hands-on activities, and practical experience with accelerators in CERN's complex.

The programme will feature hands-on sessions at several advanced CERN accelerator facilities: the Proton Synchrotron Booster (**PSB**), the Antiproton Decelerator (**AD**) and the Extra Low Energy Antiproton Ring (**ELENA**), the Low Energy Ion Ring (**LEIR**), and the CERN Linear Electron Accelerator for Research (**CLEAR**). The training will cover a range of topics, including beam dynamics, beam characterisation and control systems, steering algorithms, phasing superconducting cavities, and other advanced subjects.

We are pleased to offer this unique opportunity to **15–18 selected trainees**, who will participate in this intensive five-day hands-on course. Applicants are required to provide a motivation letter and register through the web page:
https://indico.cern.ch/e/atsoa2026

The participation of selected trainees will be fully funded by EURO-LABS, covering:

- Economy-class travel within Europe,
- Accommodation
- Daily subsistence support.

Further details on the application process will be shared shortly in the event's web page mentioned above. The application deadline is **January 20th, 2026**.

Organizers:

Theodoros Argyropoulos, Foteini Asvesta, Roberto Corsini, Ilias Efthymiopoulos (chair) – CERN and Maria J G Borge (co-chair) - IEM-CSIC.

We look forward to welcoming the selected trainees and future accelerator researchers to ATSOA2026!

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

Basic Training School 2026

The **Basic Training School of 2026 - BTS26** will take place in **May 11 - 23, 2026**, at **IFIN-HH, Bucharest-Magurele, Romania**. It will involve **hands-on activities** around the tandem accelerator complex of IFIN-HH:

1. Target preparation laboratory.
2. High vacuum technology for accelerators and special detectors.
3. Use of some of the most widely employed gamma-ray and particle detectors: HPGe, LaBr3(Ce) in ROSPHERE, neutron detectors, scintillators, simple and multistrip Si detectors.
4. DAQs; types of accelerator experiments.
5. Manning experiments at the 9 MV, 3 MV and 1 MV (RoAMS) tandems (2 days each)
6. Calibration of the accelerator and of detectors used.
7. Radiocarbon dating at the RoAMS facility.
8. De-activation measurements in an ultra-low background laboratory of IFIN-HH located in a salt mine 125 km North of Magurele.
9. Dedicated detectors and electronics for large hadron physics experiments.
10. Guided visits to other major facilities of IFIN-HH: HPD, IRASM, ELI-NP, etc.

A number of **24 students (trainees)** will be selected for a period of 12 days. Master and PhD students, as well as early years post-docs are invited to apply.

To apply, **register online by March 15, 2026,** at https://indico.nipne.ro/event/429/ or write to bts26@nipne.ro, including a letter describing your activities and a letter of support from your advisor. An international committee will select the participants according to applications.

Trainees' participation will be entirely financed by EURO-LABS: travel with economy class within Europe, accommodation and subsistence support. Trainers will be local and international. Students from outside-Europe institutions will only be granted local expenses (accommodation and subsistence).

Organizers:

Alexandra Spiridon (chair), Mihai Constantin, Razvan Lica, Elena Moroianu, Dana State, Mihai Straticiuc, Livius Trache et al.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.

FINE 2026: FINal EURO-LABS Meeting

We are pleased to announce that the FINal EURO-LABS Meeting (FINE) will take place at Karlsruher Institute of Technology (KIT) in Karlsruhe, Germany, from June 29th to July 1st, 2026. FINE will be a new opportunity, as the end of the project approaches, for participants to comprehensively assess and share project achievements, deliberate upon outcomes, and discuss the steps for preparing the final report (to be submitted after the end of the project - August 31st, 2026). Attendance is encouraged for all EURO-LABS members as well as users of the facilities, particularly students and early career researchers.
We look forward to welcoming all participants to Karlsruhe for what promises to be an inspiring and productive meeting. Mark your calendars and prepare to contribute to shaping the Final Meeting of EURO-LABS!

Figure 11. Karlsruhe, Germany

Website: https://indico.kit.edu/event/5341/#
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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101057511.