

BTF ACTIVITY REPORT 2025*

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1 Introduction

The Beam Test Facility (BTF) activities during 2025 were largely driven by the fourth run of the PADME experiment, which represented the main operational focus of the facility for most of the year. The BTF group, consisting of 3.2 FTE, ensured continuous support to beam operations, PADME data taking, facility management, and infrastructure consolidation, while preserving the operational readiness of the facility for external user activities.

Due to the extended PADME run, the BTF was not available to external users for the majority of 2025. External user access resumed only in the final part of the last quarter, when three user groups were hosted. These users corresponded to experiments postponed from the previous year, whose datataking had been delayed due to scheduling constraints and the prioritization of PADME operations. Special effort was dedicated to accommodating these projects, allowing them to complete their experimental programs within the limited beam time available.

A forced LINAC shutdown for building improvements, lasting approximately 2.5 months starting from January 2025, was exploited to carry out extensive maintenance, consolidation, and upgrade activities. This period allowed the BTF, in coordination with several LNF technical services, to work on key subsystems that are typically difficult to access during routine operations. Maintenance activities included the fluid plants, magnetic probes, vacuum systems, and safety-related components. In parallel, the BTF-EH1 was fully configured and optimized for PADME operations, both in terms of infrastructure and experimental layout. In addition to maintenance, this shutdown period was also used to implement hardware and software upgrades of the BTF infrastructure. These upgrades targeted improved reliability, operational robustness, monitoring capabilities, and long-term sustainability of the facility. Particular attention was devoted to control and logging systems, in view of future user operation and increased integration with LNF-wide infrastructures. Throughout 2025, the LINAC operated in dedicated mode for BTF at 50 Hz. The overall activity accounted for 300 activity days with around 210 beam availability days, including PADME data taking and external user beam tests. Despite the limited availability to external users, 2025 represented a year of consolidation for the BTF, strengthening both infrastructure and operational procedures in preparation for future experimental campaigns and user calls. The BTF team continues its involvement in the EUROLABS Project, securing funding 2 additional allocated weeks (total of 6 in two years) out of the 7 allocated weeks over the project's entire duration.

2 Personnel

The BTF group consists on several key personnel and technicians:

- **BTF Group:** 3.2 FTEs including external, PADME, ASIF-2, and EUROLABS users.

On the behalf of the LINAC, Control System and SICR Groups

- **Personnel:**

- B. Buonomo (BTF Technical Manager)
- E. Diociaiuti (BTF Staff)
- L. Foggetta (BTF Scientific Manager)
- C. Taruggi (PNRR TEX & BTF Staff)

3 Upgrades, Experiments, and Projects Summary

During 2025, a significant effort was devoted to maintenance, consolidation, and upgrade activities, largely concentrated during the extended LINAC shutdown period. These interventions were primarily aimed at supporting PADME operations and improving the overall reliability and operability of the BTF infrastructure.

- In the BTFEH1 experimental hall, the gas system was upgraded to support the PADME gas detector installation. This included the installation of dedicated gas pipelines and the extension of the certification range, allowing safe operation of the system. These activities ensured full compliance with safety requirements while providing the necessary operational flexibility for PADME data taking.
- Several interventions were carried out on the vacuum systems: the pumping performance of the BTF1-Straight line was restored, and the end-of-line vacuum layout of the BTF1-Bent line was redesigned and reset to provide an optimized and reliable vacuum interface with the PADME apparatus. The vacuum link between BTF and PADME was consolidated, improving operational stability and reducing recovery times during beam setup and operation.
- Magnet-related upgrades focused on improving monitoring and stability. Two additional Hall probes were installed on the DHRTB102 and DHSTB002 magnets, with full integration into the readout and Distributed Control System. The readout data were made available both in the EPIK8S environment and in the LabVIEW[®] control system, enhancing real-time monitoring and post-run diagnostics. In addition, the DHRTB102 magnet was zeroed and shorted, while stability tests and readout issue mitigation were performed on the DHPTB101 magnet.
- Interventions on the electrical plant included the correction and stabilization of the PLC readout associated with PADME magnets, addressing inconsistencies observed during early operation phases and improving overall system reliability.
- Maintenance activities were also carried out on the fluid systems, with specific actions on the BTF water plant flowmeters to restore accurate monitoring and ensure stable operation during high-duty-cycle runs.
- Maintenance operations were completed on the existing 10 Gbit Ethernet switches, improving stability and reliability of data transport between the experimental halls and the control systems. In parallel, preparatory activities were initiated to enable a future upgrade toward 100 Gbit connectivity in the direction of the SICR (Servizio Impianti Calcolo e Reti)

building. This upgrade is intended to support increased data throughput requirements from control, logging, and DAQ systems, as well as tighter integration with centralized LNF IT infrastructures. The networking upgrade effort is conceived as a common project and is being extended beyond BTF to include other LNF facilities: EUAPS, SPARC, and TEX. This coordinated approach aims at harmonizing network architecture, improving long-term scalability, and simplifying maintenance across multiple experimental infrastructures.

- On the controls and IT infrastructure side, the BTF control system continued its upgrade and consolidation process. The EPIK8S framework was further developed and deployed, including the integration of Grafana-based storage and monitoring tools. The electronic log-book (OLOG) was maintained and refined, supporting improved traceability of operations and intervention. Extensive testing of EPIK8S functionalities was performed, with particular attention to snapshot configuration, saving, and restoration procedures, which are essential for reliable machine setup and recovery.

Overall, the maintenance and upgrade activities carried out in 2025 significantly contributed to the robustness of the BTF infrastructure and ensured readiness for PADME operations as well as for future experimental campaigns.

3.1 Foreseen upgrades

In addition to the maintenance and consolidation activities carried out during 2025, several infrastructure upgrades have been defined to further enhance the operational capabilities of the BTF, in particular in the BTFEH1 experimental hall.

- A 100 kW mains power line upgrade for BTFEH1 has been approved by the LNF Electrical Plant Service. This intervention will increase the available electrical capacity in the hall, providing adequate margin to support future experiments, detector systems, and auxiliary services requiring higher power consumption. The upgrade is scheduled and fully funded, with an estimated effort of 0.5 person-month.
- Reconfiguration of the vacuum layout at the end-of-line windows: the new layout foresees the installation of a remotely controlled gating valve, a compact pre-vacuum pumping line, and redesigned exit windows. This configuration is intended to simplify and speed up user operations, particularly during the setup and connection of external vacuum chambers, while improving operational flexibility and safety. The activity will be carried out by the Vacuum Service of the Accelerator Division, with an estimated effort of 0.5 person-month.
- A variation of the vacuum PLC layout has been approved. This intervention will extend and reorganize the control logic hosting the vacuum pumps status read-back, the gating valve controls, and the vacuum gauge-related safety actions. The upgrade will allow full integration of the new vacuum layout into the control system, ensuring coherent monitoring, remote operation, and safety interlocks. This activity will be performed by the Electrical Plant Service, with an estimated effort of 0.5 person-month.

Additional maintenance and upgrade activities have been proposed but are not yet approved. These include a major intervention on the air conditioning systems of both experimental halls, aiming at the installation of backup units to guarantee operational continuity in case of failures of the existing systems. This upgrade, proposed by the Fluids Service, would require a significant

investment and a multi-month implementation phase.

Another foreseen but not yet approved upgrade concerns the installation of a double pulsed magnet system to replace or upgrade both DHPTB101 and DHPTS001 magnets. This intervention, proposed by the Magnet Service, is intended to improve beam manipulation capabilities and operational stability for future high-demand experimental programs. The activity would involve both design development and implementation phases over an extended time scale.

4 Executed and Shared Calendar

The 2025 operational calendar of the Beam Test Facility was dominated by the fourth run of the PADME experiment and by extended periods of LINAC unavailability related to building improvement activities.

A total of 189 days were devoted to PADME beam operations. Of these, 168 days corresponded to PADME data taking, while an additional 21 days were allocated to PADME beam tests and commissioning activities. After the PADME data-taking 21 days of beam time were assigned to external users.

Maintenance and upgrade activities accounted for a total of 89 days: 75 days were carried out during the extended LINAC shutdown associated with building improvement works, allowing major maintenance and infrastructure consolidation activities to be performed. An additional 14 days were used for BTF-specific maintenance, reconversion activities, and the shutdown procedures.

Periods of full shutdown and LINAC-related problems accounted for a total of 65 days.

A summary of all the activities can be found in Figure 1.

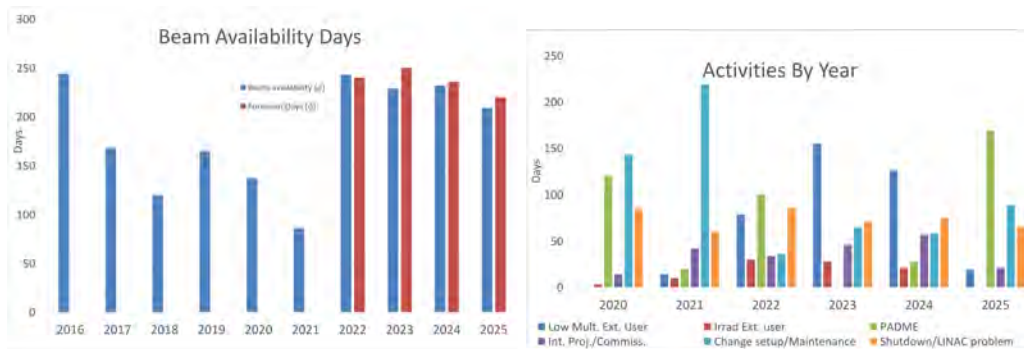


Figure 1: Left: BTF expected beam availability. Right: Last years activities fractions

External user access was organized according to the standard BTF operational model. Users were scheduled on a weekly basis and were granted exclusive access to the facility, in this case the BTFEH2 experimental hall, for the full duration of their assigned slot. Each user run started on Monday at 12:00 and ended on the following Monday at 12:00, ensuring uninterrupted access to the beamline and experimental infrastructure. All BTF operations during beam-on periods were conducted in continuous operation mode, with 24 hours per day and 7 days per week availability, ensuring optimal exploitation of the allocated beam time for both internal experiments and external users.

4.1 International Facility Calendar

BTF is part of the International Facilities Group, which handles beam-time information sharing and user coordination.

During the BTTB workshops the facility managers sit around a table to draft a shared, forward-looking activity calendar, which is then posted on the CERN sites:

- <https://cern.ch/international-facilities>
- <https://test-beam-facilities.web.cern.ch/>

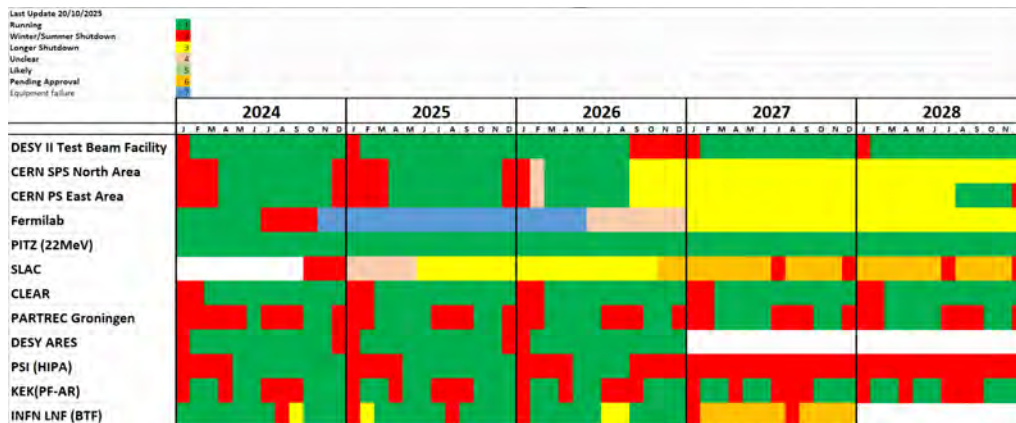


Figure 2: International Facility Calendar

5 BTF Users and Activities

5.1 BTF Internal Project

5.1.1 OLOG and EPIK8s Developing and Test

During 2025, the development and integration of the OLOG electronic logbook within the EPICS framework for the BTF continued ¹⁾, building on the deployment achieved in the previous year. Significant progress was made on the authentication and customization aspects of the service. In particular, OAuth2-based authentication was successfully implemented and tested, extending the original LDAP-based access model and aligning the service with more modern and scalable authentication standards.

In parallel, further customization of logbook tags and metadata was carried out in close collaboration with the BTF team, in order to better reflect beam test facility operations and improve the usability of the logbook during routine activities. These developments allowed OLOG to be more tightly integrated into the daily workflow of operators and users.

The OLOG service was initially deployed on an OKD-based infrastructure that was intended for testing and validation purposes and not for long-term production use. As part of a previously planned transition towards a production-grade environment, the service hosting infrastructure is currently migrating to a Kubernetes-based platform, in line with institute-wide strategies for standardization, maintainability, and long-term sustainability of containerized services.

In late October 2025, changes to the licensing model of some external repositories used for service deployment introduced additional constraints. In particular, open-source alternatives available at that time were not fully compatible with the storage version previously used together with the licensed repositories. This combination of factors resulted in the temporary unavailability of the OLOG service, including the disabling of write access from the Phoebus control interface and the unavailability of the web-based logbook.

Despite this interruption, the developments carried out during the year remain valid and reusable. Activities are ongoing in coordination with the SICR and Control System LNF service to complete the service re-deployment on the Kubernetes infrastructure, restore full functionality, and ensure a stable and fully supported production environment for OLOG.

5.1.2 ASIF-2

The ASIF (Advanced Space Infrastructure for Radiation Testing) project, developed by the Italian Space Agency (ASI), focuses on studying the impact of space radiation on the performance and the lifespan of hardware and materials used in space environments. This initiative involves various institutions engaged in scientific and technological research relevant to the space community.

ASIF-2 is a coordinated approach to create a national network supporting customers and scientific research on radiation hardness assessment for space projects. It leverages top-notch research labs and irradiation facilities, shared strategic vision from ASI, ENEA, INFN, and Università degli Studi di Milano Bicocca (UniMiB), and dedicated professionals.

The ASIF network includes several facilities across Italy, each contributing to different aspects of radiation testing. These facilities provide a comprehensive infrastructure for conducting irradiation tests and studies, ensuring that the ASIF project can achieve its ambitious goals of enhancing the resilience and reliability of space technologies.

Space radiation can cause various effects on electronic components, including:

- Total Ionizing Dose (TID)
- Total Non-Ionizing Dose (TNID)
- Displacement Damage (DD)
- Single Event Effects (SEE)

These effects can lead to cumulative long-term degradation, non-ionizing damage, and bit flips from single energetic particles. Mitigation strategies include shielding, specific rad-hard designs, and Radiation Hardness Assurance (RHA), which involves iterative design and testing methodologies. In order to discriminate the best mitigating actions, ground irradiation tests in representative environments are needed with scientific support.

The ASIF-2 project defines three core commitments for the Beam Test Facility (BTF) at the Laboratori Nazionali di Frascati (INFN-LNF). Below each commitment is summarized, presenting the work performed during 2025 and the plan for 2026.

- **Calibration activities of space detectors with electron beams, exploiting the specific temporal and energetic properties of the BTF.**

In 2025 the practical unavailability of BTF beam time for external users forced a postponement of the external user activity to next years. Nevertheless, extensive work on upgrading the BTF service toward the ASIF-2 goals was carried out, and the results were presented at three conferences (see Section 7.2). The most notable achievement was the simulation of low-energy (≤ 150 MeV) secondary particle production and the associated BTF upgrades.

- **Feasibility study of irradiation campaigns and radiation damage measurement with electron beams on space components (electronics and sensors).**

During 2025 the LINAC and BTF groups devoted two dedicated weeks to preparing a 150MeV electron primary beam as a prototype for future studies. Although the LINAC was tuned to several operating points, the beam still exhibits instabilities in position and current that require additional experimental time. This time is scheduled for the first quarter of 2026.

In the meantime, a low-energy Monte-Carlo simulation of secondary particle contamination in air (for both electron and positron primaries) was completed. The simulation focused on the benefit of reducing the thickness of the vacuum windows executed under this project developing.

- **Maintenance and updating of the test facility and systems for measuring the intensity and fluence of test beam particles.**

Ultra-thin vacuum windows ²⁾ that seal the BTF beam-line vacuum have been fabricated and stress-tested. Several technologies were explored; the production concentrates on windows made from polymer foils and solid aluminium milled to micrometric thicknesses. Their integrity and durability were evaluated through vacuum cycling, rapid venting, and beam-injection tests. The results are documented in an LNF technical note (see Section 7.2).

In 2025 a new remotely-controlled high-load linear stage was acquired from PI Industries. The stage increase the reliability of the existing trolley tables, providing higher positioning precision and greater reliability. Two stages will be installed in an XY configuration and they will be integrated into the current LabVIEW[®] control software for testing and into the EPICS (EPIC8S) environment for daily operation.

6 User's run

6.1 PADME 2025 Run

6.1.1 Beam Availability

A PADME technical run started by the end of March up to end of May 2025. During the period from June to July 2025 the PADME physics run took place. The BTF operations showed a high level of continuity and reliability. The total beam-on time during PADME physics run amounted to 822 hours, corresponding to approximately 89% of the available time. Downtime was limited and distributed among several causes: 44 hours of LINAC downtime (5%), 15 hours of PADME downtime (3%), 13 hours dedicated to energy changes (1%), 5 hours of BTF downtime (1%), and 6 hours attributed to other causes (1%). These results are summarized in Figure 3 Left.

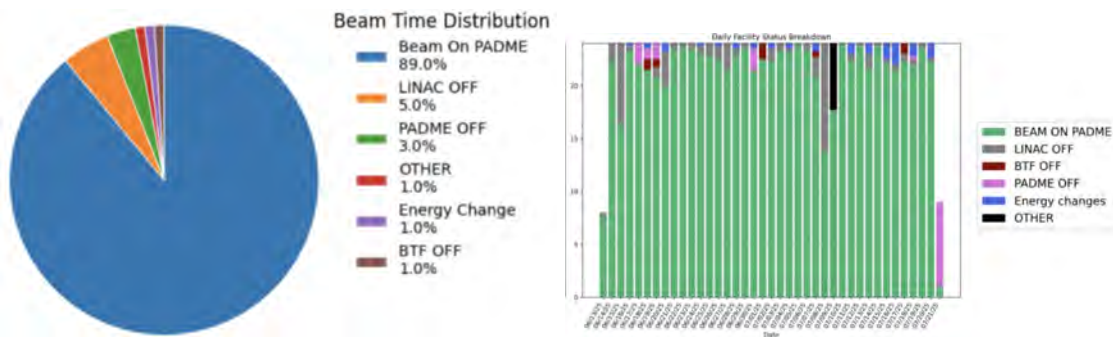


Figure 3: PADME Run - Left: June-July Beam Time Distribution. Right: Daily facility status.

The daily facility status breakdown showed in Figure 3 Right, further confirms this trend: on most days, nearly the entire 24-hour period was dedicated to beam delivery to PADME, with limited contributions from LINAC and BTF downtimes, energy changes, or other activities. On a few days, more substantial reductions in operational hours are observed, mainly due to maintenance periods or exceptional events. Overall, the June–July 2025 run can be considered highly

satisfactory in terms of operational continuity and efficiency, with a very high percentage of useful time devoted to PADME experimental activities.

During PADME Run in the last quarter of 2025, beam availability remained high, confirming the good overall performance of the facility. The total beam-on time for PADME physics run amounted to 971 hours, corresponding to approximately 84.8% of the total time. Downtime was distributed as follows: 75 hours of LINAC downtime (6.5%), 56 hours of PADME downtime (4.5%), 19 hours dedicated to energy changes (1.6%), 29 hours classified as other causes (2.6%), and only 0.5 hours of BTF downtime (negligible fraction).

The beam time distribution (shown in Figure 4) Left clearly shows that the dominant operational mode was beam delivery to PADME, with downtime components remaining limited in comparison to the total running time.

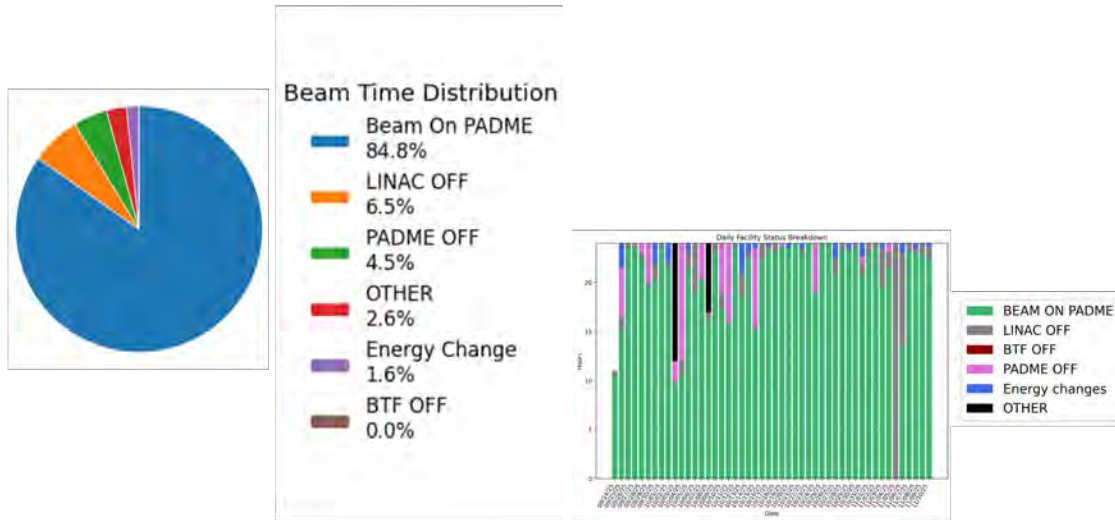


Figure 4: PADME Run - Left:Q4 Beam Time Distribution. Right: Daily facility status.

The daily facility status breakdown (Figure 4 Right) confirms this picture: most days were characterized by nearly continuous beam delivery, while isolated periods of reduced availability are attributable to LINAC stops, PADME-related issues, energy changes, or other operational activities. Overall, Run Q4 demonstrates a sustained high level of beam availability and operational efficiency, with more than 84% of the time effectively devoted to PADME data taking.

6.1.2 Beam and Machine Issues

During the PADME run, some beam- and machine-related issues were observed. First, networking problems intermittently affected operations. In addition, hardware issues were encountered in the control boards: QUATB003/QUATB004 during Q3 and QUATM002/QUATM003 during Q4. These required dedicated interventions and contributed to temporary inefficiencies.

A water leak in the UFS system was also reported and addressed. Furthermore, an intervention on the Electrostatics lens Power supply was necessary during the run.

Compared to the previous data-taking period (Q3), the LINAC charge in Q4 appeared to be reduced. In order to achieve the required multiplicity, it was necessary to open the scrapers. This operational adjustment was essential to maintain the desired beam conditions for PADME.

Additional beam instabilities were observed, particularly related to sudden charge fluctuations that

are not yet fully understood. LINAC current measurements showed a clear time dependence of the emission: immediately after startup, a strong charge spike is observed, followed by a gradual decrease and stabilization after approximately 30 minutes. There are indications that the system may not properly handle longer pulse widths. Further investigations are ongoing to clarify the origin of these effects.

6.2 Pcube_DIAG_TEST

Within the framework of the EUROLABS co-funding program, the PSI Pcube team (Paul Scherrer Institut) carried out an experimental test campaign at the DAΦNE Beam Test Facility under the project acronym Pcube_DIAG_TEST. The activity took place from December 1 to 8, 2025, and was aimed at testing and calibrating a prototype of the Pcube beam diagnostics developed in view of a proof-of-principle demonstrator for a high-yield positron source for the FCC-ee injector at SwissFEL.

The experimental program focused on the characterization of a scintillator-based diagnostic system, consisting of a scintillator screen with imaging camera and a scintillator fiber read out by PMT and ADC, using electron and positron beams at different energies and charges. The setup is reported in Figure 5 Left. Tests were performed with e^+/e^- beams at 300, 90, and 50 MeV, with variable bunch multiplicities up to the 10^4 particle range and beam sizes of several millimeters.

While the scintillator screen measurements were not fully conclusive due to the limited charge

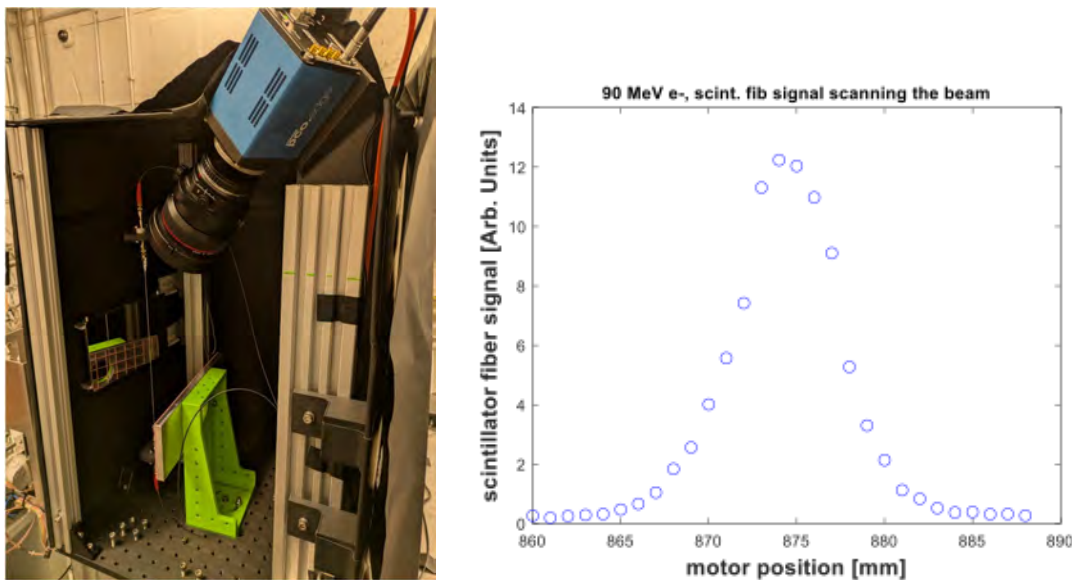


Figure 5: Left: Pcube_DIAG_TEST experimental setup. Right: transverse Gaussian beam profile reconstructed with the scintillating fiber.

density on the view-screen, the scintillator fiber setup demonstrated high sensitivity and good performance. Using the BTF motorized table, the team successfully reconstructed the transverse Gaussian beam profile and observed a linear response of the scintillator fiber as a function of beam energy and charge (see Figure 5 Right). Further analysis of the acquired data is ongoing to refine the calibration factors. Preliminary results have been presented internally at PSI, with future publications foreseen and proper acknowledgment of BTF and EUROLABS support.

6.3 CRILIN Calorimeter

The CRILIN electromagnetic calorimeter concept is based on a semi-homogeneous architecture composed of matrices of high-density crystals read out by silicon photomultipliers with minimal interspacing. This design combines excellent energy resolution with outstanding timing performance, targeting a resolution below 100 ps, which enables efficient rejection of beam-induced background (BIB), high rate capability, and support for five-dimensional calorimetry. Longitudinal segmentation enhances background suppression, particle-flow reconstruction, and discrimination between electromagnetic and hadronic deposits, while fine transverse granularity ensures robust performance in high-occupancy environments.

The choice of detector materials and readout technology is driven by the requirements of compactness, radiation hardness, and fast response. High-density, radiation-tolerant crystals and small-pixel SiPMs are employed to ensure reliable operation in harsh conditions, with fast scintillating and Cherenkov materials such as PbF_2 and ultra-fast PbWO_4 under consideration. The semi-homogeneous structure uniquely combines the high resolution of crystal calorimetry with sampling-like longitudinal segmentation, offering flexibility in layer design and optimization. This modular and compact approach provides a high-performance solution for next-generation experiments requiring precise timing, fine granularity, and effective background rejection. A dedicated study (the setup is shown in Figure 6 Left) was conducted on crystals with a new transverse area of $1.3 \times 1.3 \text{ cm}^2$ at the BTF, using 500 MeV electron beams in both single-particle mode and in bunches of approximately 30 particles within 10 ns. The sub-millimeter beam spot is particularly well suited for precise light-yield measurements and for systematic comparisons of different surface treatments and wrapping configurations. Several wrapping materials (Teflon, Mylar, and Vinyl)

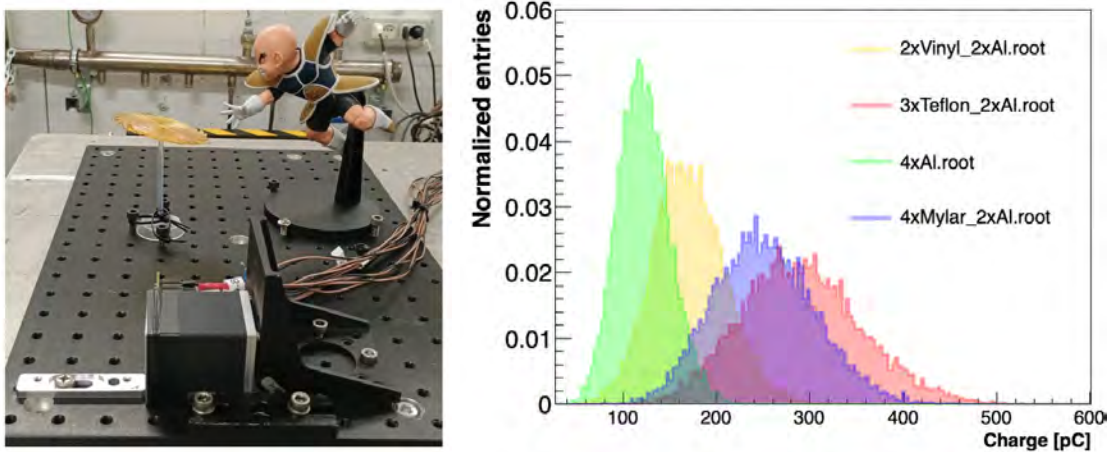


Figure 6: Left: experimental setup test in BTF. Right: Charge reconstructed with the different wrapping possibilities.

and surface coatings (aluminum and reflective paint) were evaluated in terms of their impact on light collection efficiency. The measurements indicate that reflective paint does not offer a significant performance improvement with respect to aluminum coating. As shown in Figure 6 Right, the best performance is achieved with a Teflon-based solution, consisting of three $50 \mu\text{m}$ layers combined with a $50 \mu\text{m}$ aluminum coating, which remains the reference choice for optimal light yield.

7 Dissemination and Contributions

Throughout 2025, a significant effort was devoted to educational, training, and outreach activities, mainly driven by the contributions of E. Diociaiuti, D. Di Giovenale, and C. Taruggi. The program addressed a broad and diversified audience, including undergraduate and PhD students, university students, high-school and middle-school pupils, as well as the general public. Activities comprised tutoring programs, guided laboratory visits, dedicated seminars, and outreach events aimed at promoting scientific culture and increasing awareness of accelerator-based research.

As summarized in Table 1, the largest participation was recorded for LNF visits dedicated to

Event type	People reached
Undergraduate + PhD tutoring*	25
LNF Visit for University	45
LNF Visit for High School	2340
LNF Visit for Middle School	778
Talk to Student	132
LNF Visit for general public	196

Table 1: Educational and outreach activities carried out in 2025. *Activities carried out within the projects EPOS, EuPRAXIA Doctorate Network and Roma1 PhD Accelerator program.

high-school students, involving 2340 participants, followed by visits for middle-school students with 778 attendees. Additional activities included visits for university students and the general public, as well as dedicated talks and tutoring initiatives for students at different levels. Overall, these activities contributed to strengthening the interaction between the laboratory and the wider community and to supporting educational growth across different age groups. Some picture taken during this dissemination activities can be found in Figure 7.

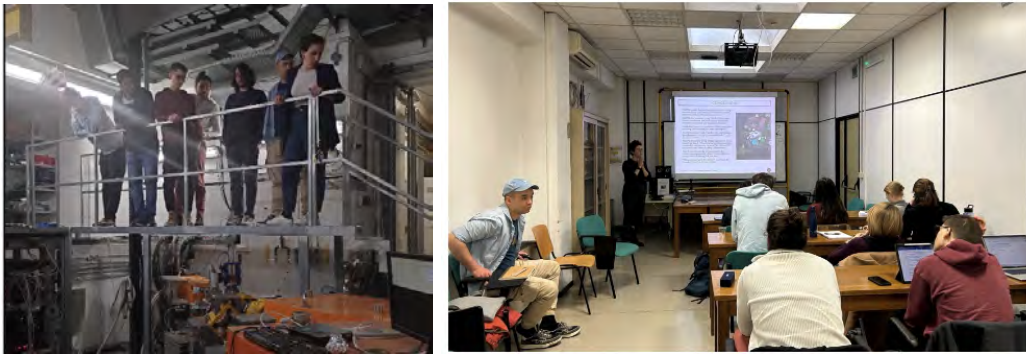


Figure 7: Some pictures taken during the visit of the Roma1 PhD Accelerator program.

7.1 Selected Publications Citing BTF

- F. Urso *et al.*, “Online Dose Verification in VHEE Radiotherapy Using Bremsstrahlung Radiation,” arXiv:2509.13056 (2025).
- F. Arias-Aragón *et al.*, “Atoms as electron accelerators for new physics searches,” *J. High Energy Phys.* 06 (2025) 001.

- M. Garattini *et al.*, “Steering of sub-GeV positrons by ultrathin bent silicon crystal for ultraslow extraction applications,” *Phys. Rev. Accel. Beams* 28 (2025) 023501.
- F. Arias-Aragón *et al.*, “Combined Evidence for the X17 Boson After PADME Results on Resonant Production in Positron Annihilation,” arXiv:2504.11439 (2025).
- C. Cantone *et al.*, “Advancements in Muon Collider Calorimetry: Design, Testing, and Radiation Resistance of the CRILIN Calorimeter Prototype,” *EPJ Web Conf.* 320 (2025).
- A. Cemmi *et al.*, “Radiation resistance of the Muon Collider CRILIN calorimeter prototype equipped with Cherenkov lead fluoride crystals,” *IEEE Trans. Nucl. Sci.* (2025).
- S. Bertelli *et al.*, “Blind unblinding procedure for the PADME X17 data sample,” *J. High Energy Phys.* 06 (2025) 001.

7.2 Conference and contributions

- **BTTB13** — 13th edition of the Beam Telescopes and Test Beams Workshop, Valencia, Spain, 19–23 May 2025. Talk (no publication) – presenter: Luca Foggetta.
- **PPPS 2025** — combined 25th IEEE Pulsed Power Conference (PPC) and the 52nd IEEE International Conference on Plasma Science (ICOPS), Berlin, Germany 15-20 June 2025. Talk – presenter: Claudio di Giulio.
- **IBIC2025** — International Beam Instrumentation Conference, Liverpool, United Kingdom, 7–11 Sep 2025. Poster (no peer-review) – presenter: Eleonora Diociaiuti. PDF: MOPMO27 DOI: 10.18429/JACoW-IBIC2025-MOPMO27.
- **AE 2025** — International Conference on Applied Electronics (AV25), Pilsen, Czech Republic, 8–9 Sep 2025. Talk (peer-reviewed) – presenter: Clara Taruggi. DOI: 10.1109/AE66163.2025.11197819 <http://ieeexplore.ieee.org/document/11197819>.
- **INFN-2025-10-LNF** Technical Note: LNF-BTF vacuum windows production and stress tests
- **INFN-2025-08-LNF** Technical Note: Controls system update in the Beam Test Facility of the Laboratori Nazionali di Frascati

References

1. C. Taruggi *et al.*, “Developing EPICS at the Frascati Beam Test Facility,” 2025 International Conference on Applied Electronics (AE), Pilsen, Czech Republic, 2025, pp. 1-4, doi: 10.1109/AE66163.2025.11197819.
2. L.G. Foggetta *et al.* “LNF-BTF vacuum windows production and stress tests”, <https://www.lnf.infn.it/sis/preprint/getfilepdf.php?filename=INFN-2025-08-LNF.pdf>