WP 5: Open, Diverse and Inclusive Science

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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.

WP5
Open, Diverse and Inclusive Science

WP Coordinator Maria J G Borge

Task 1	Task 2	Task 3	Task 4
Diversity and Dissemination	Open Science & Data Management	Machine learning	Training
Enhancing diversity: Nacionality Gender Age Level of expertise Enhancing Dissemination Web site Videos of RI Newsletters,…	Promoting Data Management Plan Creating a portal for Nuclear Physics data tools	Machine Learning Beam control and Optimization & Control of the source of Laser driven Accelerator	Hands-on training on the facilities 4 events of Basic Training 4 events of Advanced training
Paolo.Giacomelli **paolo.giacomelli@bo.infn.it** **Barbara Pezzotta**	**Antoine Lemasson** **lemasson@ganil.fr** **Adrian Matta (LPC, CNRS)** **Thorsten Kollegger (GSI)**	**Sabrina Appel.** **s.appel@gsi.de** **Sebastien Rothe (CERN)** **Sandrine Dobosz Dufrenoy (CEA)**	**Livius Trache** **livius.trache@nipne.ro**

Talk by Antoine Yesterday!

Talk by Nico Yesterday!

Task 1: Diversity & Dissemination

FTE taken from Management office

- Responsible : Paolo Giacomelli, P.O.

EURO-LABS consortium brings together, at the European level, the Nuclear Physics (NP) and the High-Energy Physics (HEP) accelerator and detector communities. **This will result in a cross-fertilization of these disciplines**

Diversity:

Within task 5.1 we will work to ensure the largest posible diversity of potential users

Engaging people of Different Nationality

Gender

Age

Level of profesional expertise

- **Statistics on Gender → to be compared with previous Projects ENSAR2, AIDA, check evolution in a decade**
- **Check and promote that child care is provided in the conferences of the field.**
- **Deliverable: EURO-LABs user's diversity final report M48**

Task 5.1: Dissemination

30K€ for the video

- Responsible : Paolo Giacomelli P.O.

EURO-LABS activities and results are disseminated using several key communication tools:

Project Public Website

https://web.infn.it/EURO-LABS/

https://institucional.us.es/clear/transnational-access

Intranet and collaboration workspaces

EURO-LABS newsletter circulated to project members and to a wider community every 6 months

Modern media channels, like social media, YouTube On going

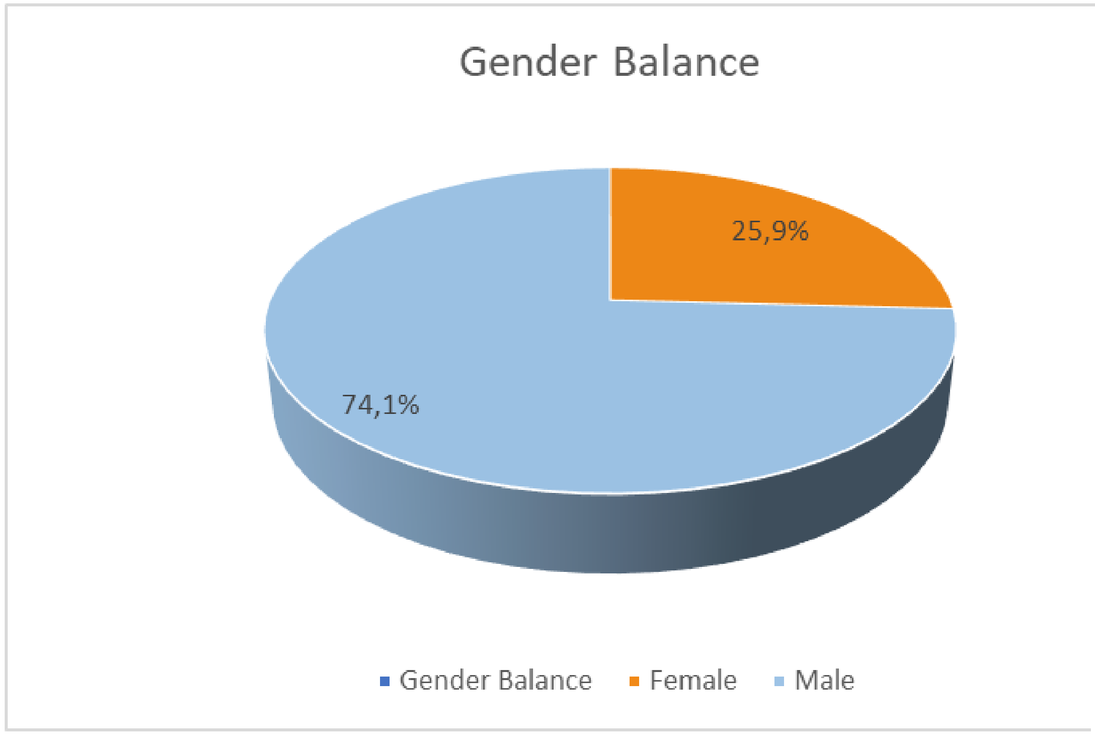
tec-eurolab.com: Corporate video - english version

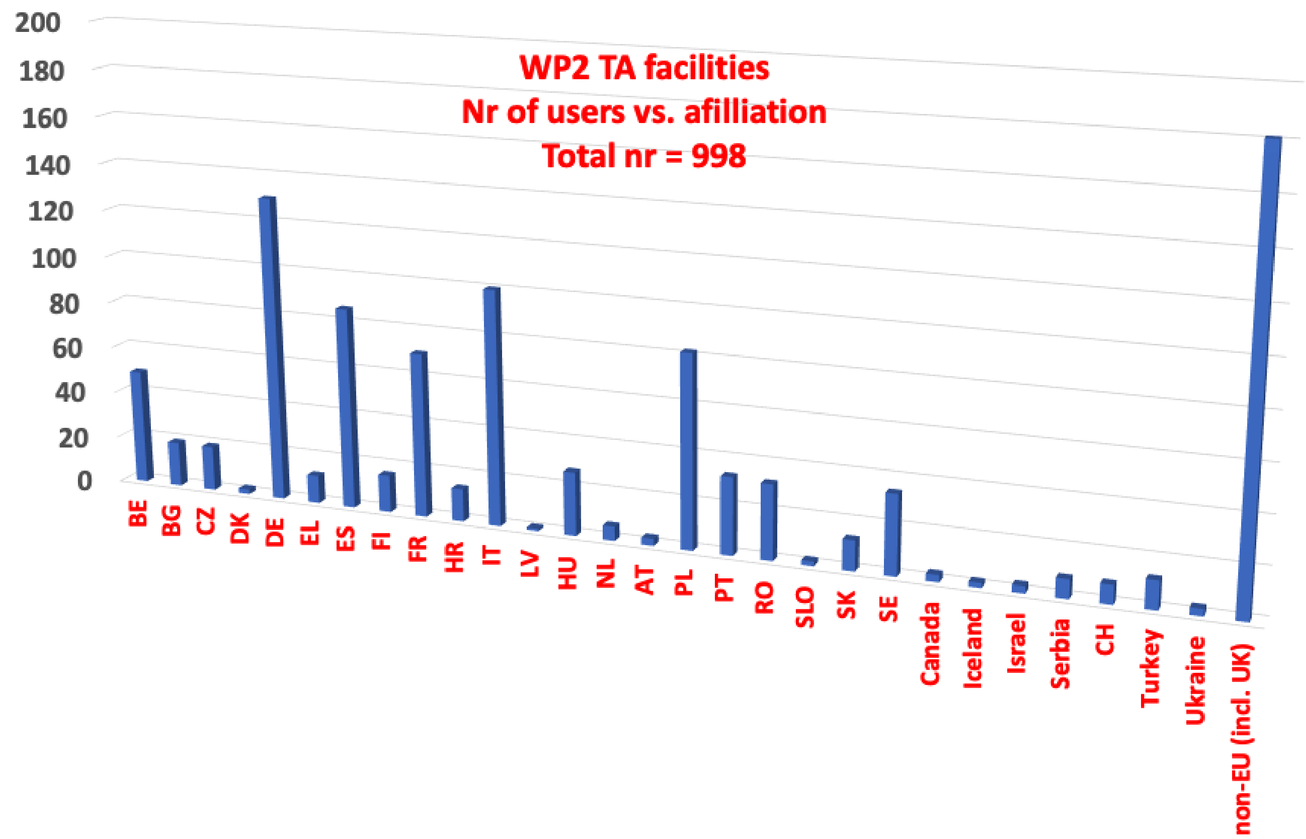
YouTube · TEC Eurolab Channel
24 Feb 2023

Project mailing lists

Videos of the various RI, 39 in total, 36 at least in the webpage 2 facilities missing

• Diversity: Gender Balance & Nationality



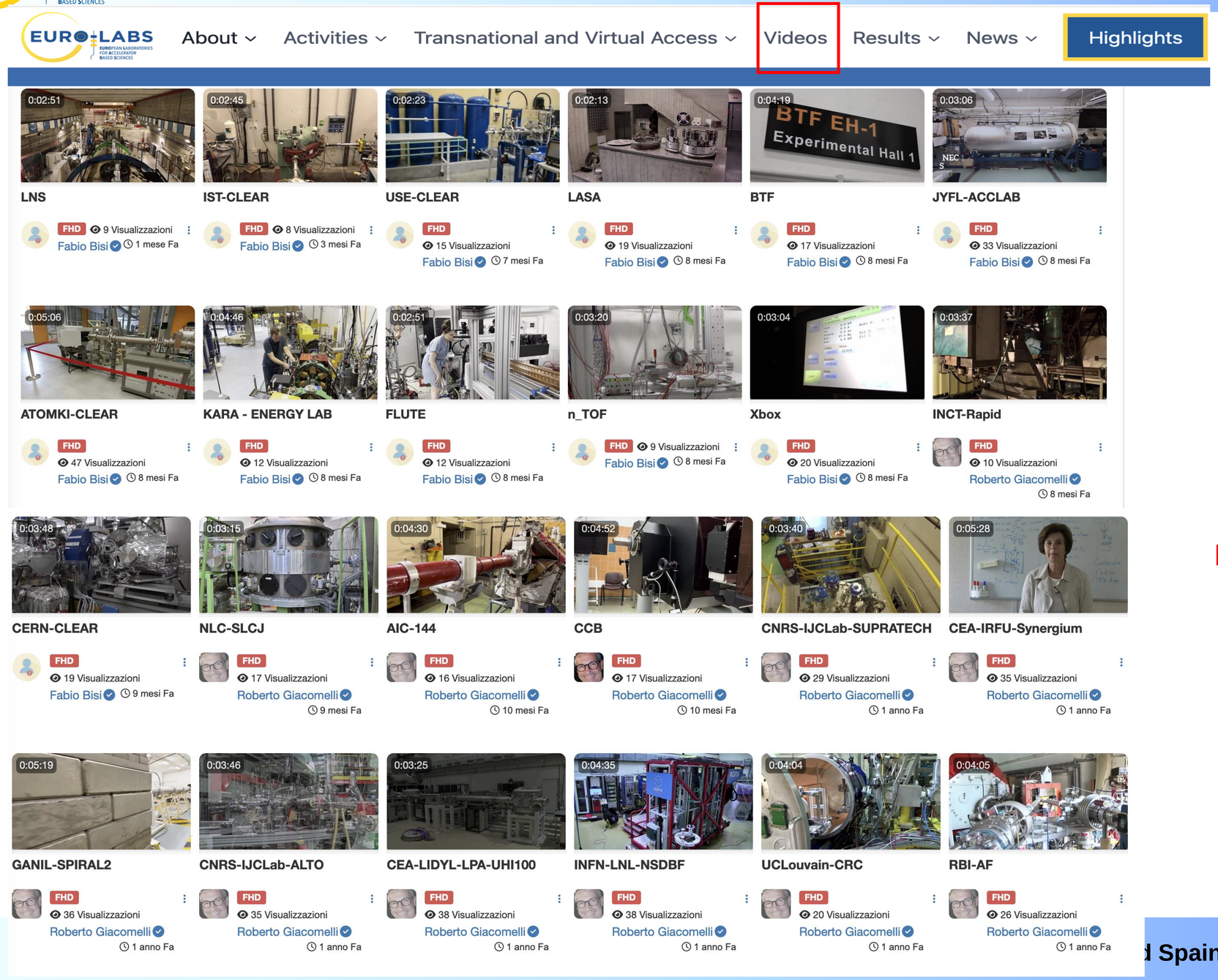


Already presented by Navin

Female component varies
from 30,3% in WP2 to 19,3% in WP4

Non EU very close to 20%
Distribution proportional to population
except for France

VIDEOs at EURO-LABS webpage



https://mediawall.infn.it/cat/euro-labs

Total 36 videos

Only 2 missing

Important to place a counter in the web to learn the number of hits

EURO-LABS Newsletter

ISSUE No.1 | JANUARY 2024

Second Annual Meeting of EURO-LABS at Krakow, Poland, from October 9Th-11Th, 2023

Participants of BTS23 (IFIN-HH, Bucharest-Măgurele, Romania) in the salt mine used for low-background work

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

Editorial

Highlights

Upcoming Events:
Anouncement of Meetings and schools

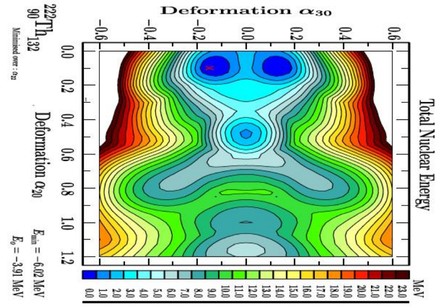
Long articles

Editor from M.J. G Borge → Maria Colonna

EURO-LABS Newsletter

ISSUE No.2 | JULY 2024

The Students of the ATSOA school at CERN June 2-7, 2024



Contour plot of the energy of ^{222}Th as function of quadrupole and octupole deformation parameters.

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

29 pages

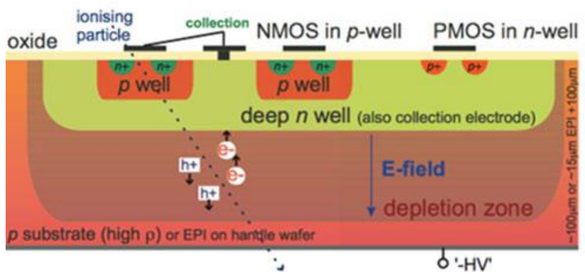
Articles at the newsletter of January 2024

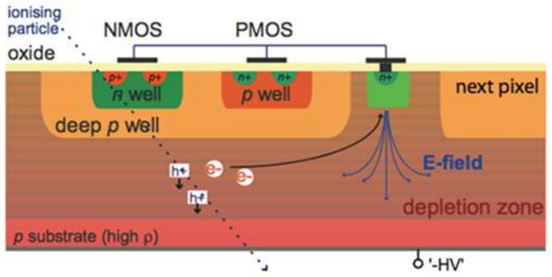
- **First EURO-Labs school at IFIN-HH**
  (Livius Trache, IFIN-HH)

- **Radiative decay of the ^{229}Th Clock Isomer**
  (Sean Freemann, ISOLDE)

- **AGATA our Jewel of Nuclear structure**
  (José Javier Valiente-Dobón, INFN, Padova)

- **D-MAPS in EURO-LABS**
  (Marko Mikuz, JSL, Slovenia)

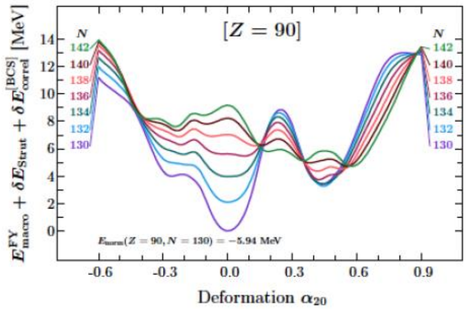


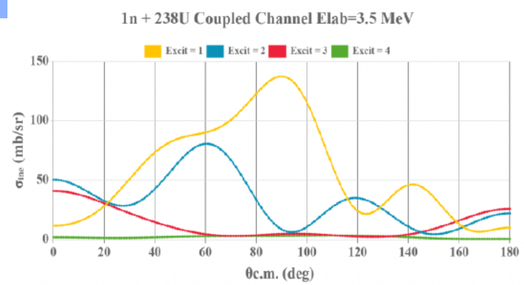


Articles at the newsletter of January 2024

- **Theo4exp: a theory service provided by EURO-LABS**

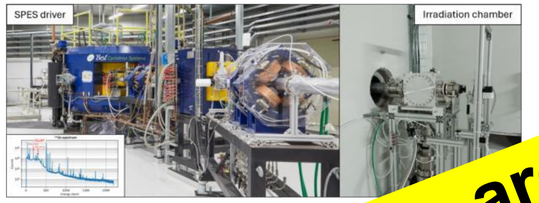
Manuela Rodriguez-Gallardo (USE), Gianluca Colò (U Milan) and Jerzy Dudek





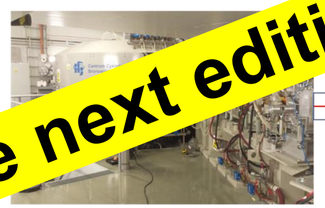
- *Restarting the LNL Cyclotron: the beating heart of the SPES project comes to life again*

Faiçal Azaiez, LNL Director



- *A new proton CT scanner based on DSSD and Scintillators*

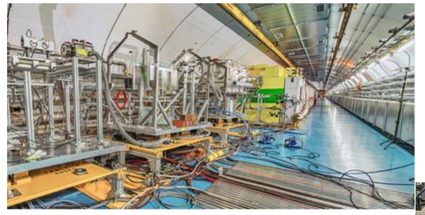
Enrique Nácher (IFIC, Valencia)


Proteus C-235 at CCB

proton CT scanner

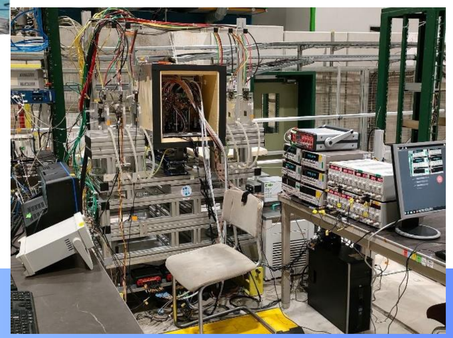
- *New machine learning toolkit enhances acceleration at GSI (no photo)*
- *Sabrina Appel and Nico Madysa*

Talk by Nico Madysa



- *Astrophysical Jet recreation at the HiRadMaT Facility*

→ *Talk by Jack Halliday*



- *Low gain Avalanche Detectors in EURO-LABS*

Bojan Hiti (JSL, Ljubjana, Slovenia)

Contributions for the next editions are needed

Task 4 : Training

Objetives: **In order to enhance competitiveness of our RI and its technical capabilities we will forge a coherent, stable, and predictable system of training, formation schools and events that uses the strengths and capabilities of all partners providing hands-on training**

Plan: 2 set of schools

4 Basic Training (1/year) to take place at smaller accelerator facilities that allows hands-on activities: IFIN-HH, HIL Warsaw, Seville, etc.

4 Advanced Training (1/year) at larger, state-of-the-art facilities: CERN (2024 and 2025), GSI/FAIR (2024).
Two of these will be dedicated to the technical and engineering staff.

Training schools of 7-10 days, open to 15-20 students, from master's degrees to PhD students/engineers / technologist

Critics: Details on health and safety procedures for students and researcher were not provided
The students at the facilities has to followed the safety procedures of each Facility

To coordinate the activities of this task we will select a Training Scientific Board (TSB) in the first 6 months of the Euro-Labs project

Milestones and Deliverables

Milestone: Selection of the Training Scientific Board. M6 of Euro-Labs
Deliverable: Report on activities after 24 months, including follow-ups from participants. M24
Deliverable: Final report. M48

Grant Agreement No: 101057511

EURO-LABS

EUROpean Laboratories for Accelerator Based Sciences

HORIZON-INFRA-2021-SERV-01-07 Project EURO-LABS

DELIVERABLE REPORT

REPORT ON ACTIVITIES AFTER 2 YEARS, INCLUDING FOLLOW-UP FROM PARTICIPANTS

DELIVERABLE: D5.5X

Document identifier:	EURO-LABS-D5.5
Due date of deliverable:	End of Month 24 (August 2024)
Report release date:	31/08/2024

Training hands-on Schools so far

Basic training school of 2023 BTS23

IFIN-HH, Bucharest - Măgurele

https://indico.nipne.ro/event/246/timetable/#20230913

BTS24

The Basic Training School on Accelerators 2024, HIL and INCT, June 18-27 in Warsaw
U200-P cyclotron, INCT electron accelerators
https://www.slcj.uw.edu.pl/en/bts24

EURO-LABS also sponsor participation in other schools Approved by TSB

"AZURE2 R-matrix school" in Edinburgh

.

the NPA XI school in Dresden.

TSB MEMBERS

List of TSB members:

1. *Livius Trache - IFIN-HH, Romania – Task 5.4 Leader (Chair)*
2. *Maria J.G. Borge – IEM-CSIC, Spain – WP5 Coordinator (Co-chair)*
3. *Rosanna Depalo - INFN and contact with ChETEC-INFRA, Italy*
4. *Ilias Efthymiopoulos - HEP Accelerators (CERN), Switzerland*
5. *Hanna Franberg-Delahaye – GANIL, France*
6. *Magdalena Kowalska - CERN/ISOLDE, Switzerland*
7. *Pawel Napiorkowski /Urszula Gryczka - HIL/INCT, Poland*
8. *Christoph Scheidenberger – GSI/FAIR, Germany*
9. *Marcel Stanitzki - HEP Detectors DESY, Germany*

Advanced School GSI/FAIR Nov 2024
Advanced school CERN in May 2025
Basic School in Seville in June 2025
INTrasNS Florence Jan 25

BTS23: Bucharest-Magurele, 13-23 Sept 2023

- Excellent response:
  - 19 students from Europe
  - 4 form outside the continent: Brasil, Mexico, South Africa, India – paid their travel
  - 4 from Bucharest: UB and UPB
- Program: hands-on, 2 exps at 3 and 9 MV tandems; 3 days each
- 3 working groups of 9 (too large!)
- Visit at the microBequerel lab, salt mine Slanic-Prahova
- Visits to some large installations of IFIN-HH: Hadron Physics Dept, RoAMS, ELI-NP, IRAS
- Report session - results
- Organizers: Razvan Lica, Dana State, Alex Spiridon, Nicoleta Florea, M. Straticiuc, L. Stan, C. Mihai, L.T. et al.
- **Thanks:** Dir Gen, M. Petrovici, D. Ghita, R. Margineanu …

BTS24

Basic Training School on Accelerators

June 18th - 27th, 2024
Warsaw, Poland

- **Organized by the Heavy Ion Laboratory** (HIL) and **the Institute of Nuclear Chemistry and Technology** (INCT).
  https://www.slcj.uw.edu.pl/en/bts24/.

BTS24 involved hands-on activities around the U200-P cyclotron (HIL) and electron accelerators (INCT) to get a basic knowledge and develop experimental skills:

- **use of detectors: gaseous telescopes, semiconductor HPGe, $LaBr_3$ scintillators**
- **electron beam control and dosimetry**
- **γ-ray spectroscopy**
- **fast timing measurements**
- **targets preparation**
- **effects of ionizing radiation on biological material**

18 trainees, 8 female (44%)

Heavy Ion Laboratory

BTS24 – experiments at HIL

- Participants carried out independent experiments in small groups, using the unique research equipment available at the HIL Warsaw, and had a chance to show the obtained results in the presentation session closing the school.

- Three experiments were performed on a **^{20}Ne beam at the energy of 77 MeV from the Warsaw Cyclotron**.

- The obtained data were subject to simple analysis aimed at answering research questions posed by the instructors.

- The workshop program was supplemented by a series of lectures introducing the issues related to the measurements performed and current problems of nuclear physics and applications in medicine and energy.

BTS24 – social event

- On Sunday students and supervisors visited the "Rancho pod Bocianem" where attractions awaited them: a rope park and air gun shooting.

- After having fun together, there was a barbecue and a bonfire, where international hits were sung with a guitar.

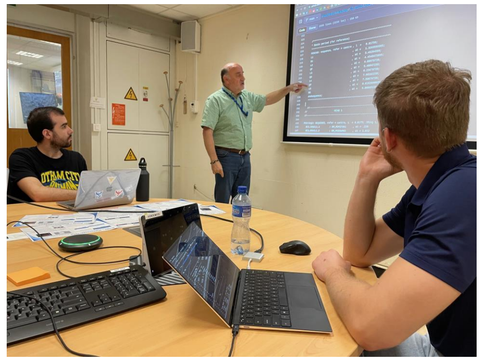
ATSOA24 – Advanced Training School for Operation of Accelerators

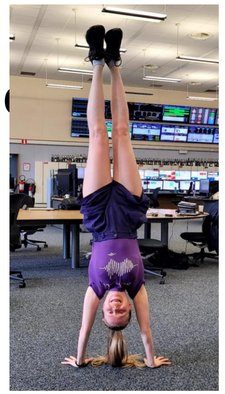
Geneva, Switzerland in June 3rd – 7th, 2024,
organized by Maria J G Borge (chair, IEM-CSIC), Ilias Efthymiopoulos (CERN), Roberto Corsini (CERN), Tirsi Prebibaj (CERN), Alberto Rodriguez (CERN). https://indico.cern.ch/event/1357293

It involved hands-on activities in three facilities: CLEAR, ISOLDE and PSBooster. The training included an introduction to accelerators, control systems, beam characterization, steering algorithms, phasing superconducting cavities and other advanced topics.

Eighteen students (trainees), 28% women, from European institutions
The trainees were divided in 3 groups of 6 students for the hands-on sessions that took place at the Cern C Centre (CCC), ISOLDE and CLEAR.

Two mornings of introductory lessons

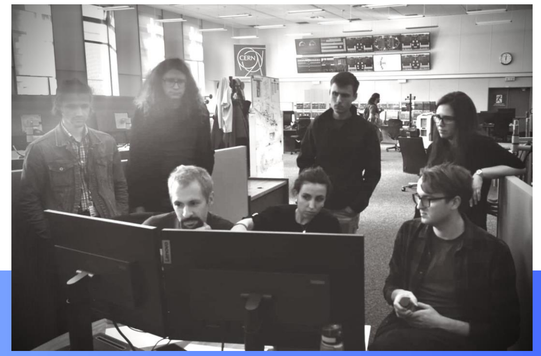




Some exercise at the CCC

7 half-days hands-on sectios of-hands-on activities
Every student did 3 sections in two facilities

Friday Afternoon The student groups make a presentation of their research interest and their message to take home



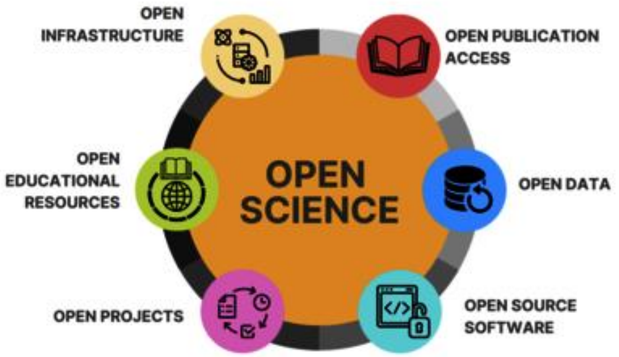
Dinner in Geneva (Bains de Pâquis)

Query of satisfaction
Thanks Ilias

- Did you get the opportunity to ((several choices possible):
  - meet experts (85,7%)
  - update and improve your knowledge (85,7%)
  - learn new concepts (92,86 %)
  - initiate collaborations (35,7 %)
  - ideas for new studies or projects (42,9%)
- The length of the hands-on sessions compared to the lectures
  Balanced 1=too long, 2=balanced, 3=too short
  The average given was 2.3
- Was it positive to see several facilities?
  - Yes (100%)
  - No (0%)

EURO-LABS Advanced Training:
Open Science and Data Management

EUROPEAN LABORATORIES FOR ACCELERATOR BASED SCIENCES



- Antoine Lemasson (CNRS - GANIL) – Introduction to Open Science
- Florian Uhlig (GSI) – Tools for sustainable programming
- Özlem Özkan (Helmholtz Metadata Collaboration) – Metadata for beginners
- Andrew Mistry (GSI) – European infrastructures for Open Science
- Harry Enke (AIP) and Elena Sacchi (AIP) – Astroparticle/PUNCH4NFDI
- Clemens Lange (PSI) – Open Science in HEP
- Kathrin Göbel (GSI) – Open technology transfer
- Adrien Matta (LPC Caen - CNRS) and Jérémie Dudouet (IP2I Lyon - CNRS) – Hands-on data challenge
- Christoph Scheidenberger (GSI) and Christine Hornung (GSI) – Excursion to visit the GSI Helmholtzzentrum für Schwerionenforschung and FAIR
- **24. - 29.11.2024**
- **18 confirmed participants**
- **STILL POSSIBLE TO JOIN!!!!**

https://indico.gsi.de/event/19808/

HGS-HIRe for FAIR
Helmholtz Graduate School for Hadron and Ion Research


Photo: Walter P. Lhotzky

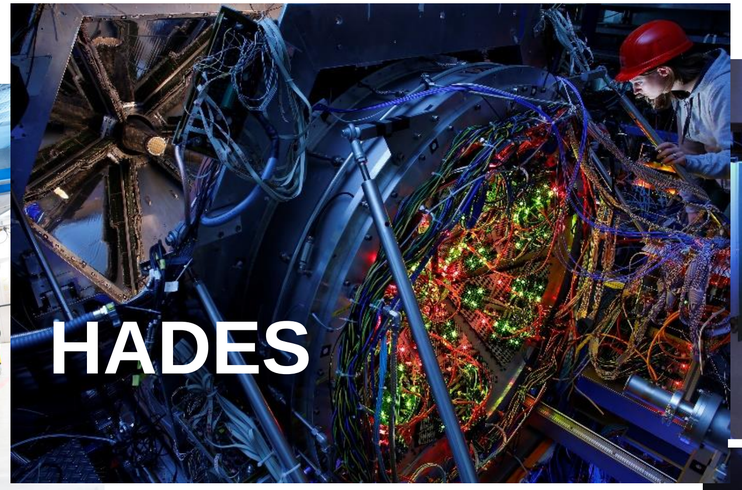
EURO-LABS Advanced Training: Open Science and Data Management

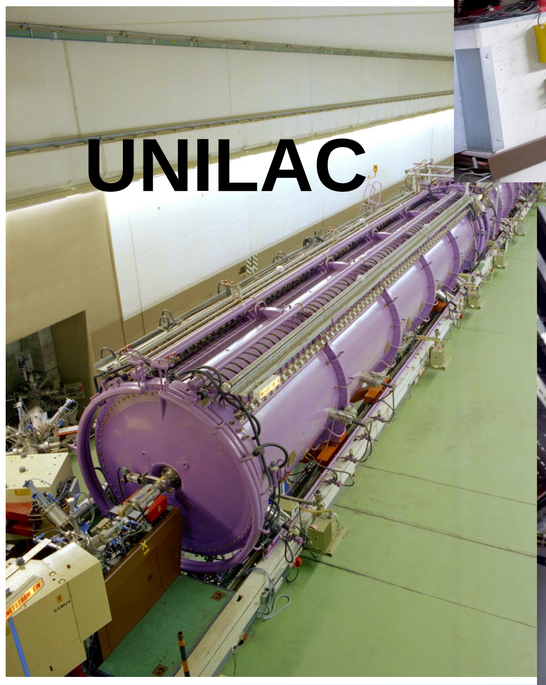
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	Welcome, Open Science / Data management introduction	Astroparticle / PUNCH4NFDI	European Infrastructure for Open Science	Hands-on	Hands-on (reporting)
	Metadata for beginners	Open Science in HEP	Open technology transfer		Feedback
	Tools for sustainable programming, GIT-Lab Introduction	Hands-on	Hands-on	GSI Tour	Departure
Arrival	Hands-on (Topic introduction)	Hands-on	Hands-on		

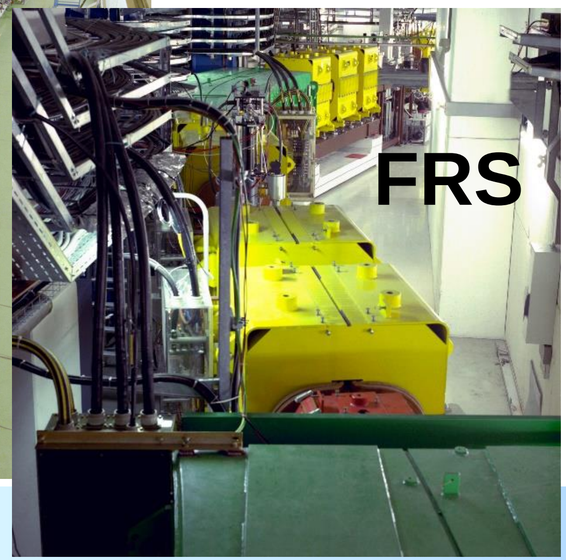
EURO-LABS Advanced Training: Open Science and Data Management

EURO-LABS
EUROPEAN LABORATORIES FOR ACCELERATOR BASED SCIENCES

GSI -Tour







FAIR

BTS25

- **Date proposed: June 3rd – 9th , 2025**
- **Place**: Centro Nacional de Aceleradores (CNA)-University of Seville (Seville, Spain)
- **Participants**: up to 20 early PhD or Master students

CNA Centro Nacional de Aceleradores

UNIVERSIDAD DE SEVILLA

Basic Training School in Nuclear Physics (BTS25)

Preliminary program:

4 Groups of 5 students max. :G1,G2,G3,G4

Poster session/Flash talk

Social event: Tapas Dinner

	Monday	Tuesday	Wednesday	Thursday	Friday	weekend	weekend	Monday
9:00-10:00 h		General talk	General talk	General talk	General talk	Free time	Free time	G1 resultspresentation
10:00-10:20 h		coffee break	coffee break	coffee break	coffee break	Free time	Free time	coffee break
10:30h-11:30		AMS/Cyclotron /neutrons exp.	AMS/Cyclotron/IBA exp.	AMS/Cyclotron /neutrons exp.	AMS/Cyclotron/ IBA exp.	Free time	Free time	G2 resultspresentation
11:30h-12:30h						Free time	Free time	G3 resultspresentation
12:30h-13:30h						Free time	Free time	G4 resultspresentation
13:30h-14:30h		Lunch	Lunch	Lunch	Lunch	Free time	Free time	Lunch
14:30h-15:30h		General talk	General talk	PS/flash talk	PS/Flash talk	Free time	Free time	
15:30h-16:30h		DA/IBA exp	DA/neutrons exp	DA/IBA exp	DA/neutrons exp	Free time	Free time	
16:30h-17:30h						Free time	Free time	
16:30h-17:30h		IBA exp/DA	neutron exp/DA	IBA exp/DA	neutron exp/DA	Free time	Free time	
17:30h-18:30h		DA	DA	DA	DA	Free time	Free time	
20:00h-21:30 h	Social event							

General Talks (1 hour):

- Introduction CNA
- Radioprotection and sefety issues /Medical Physicsapplications???
- Nuclear Physics synergies with larger facilities
- Material Scienceapplications
- AMS applications
- Neutron Physics applications

4 Hands-on experiments (3 hours):

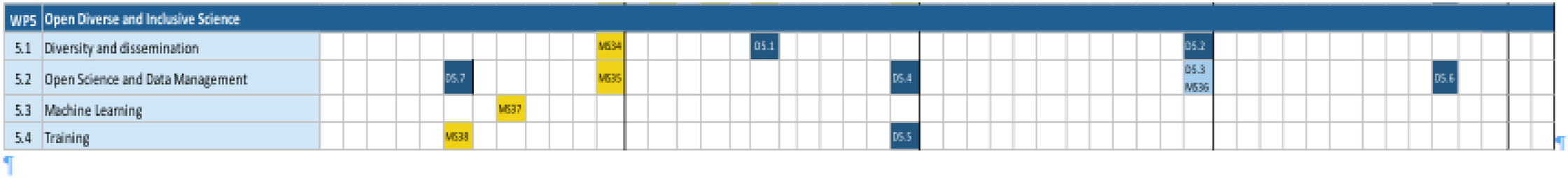
- Production and use of neutrons at HiSPANoS
- Determination of radioactive isotopes in nature by AMS
- Characterization of nuclear targets through RBS-NRA
- Proton beam performance and characterization for medical physics

Experiments DataAnalysis(DA):

- 2 hour session on DA of the experimentalresults by the complete group, with proper supervision

Common session with students presentation results

Gantt Chart of WP 5



Year	Month from start	Milestone /deliverables	Description
1	6	D 5.7 (T 5.1+5.2)	Data Management Plan
	6	MS38 (T 5.4)	Selection of the Training Scientific Board
	8	MS37 (T 5.3)	The source code of the ML toolkit prototype is available on a shared platform
	12	MS34 (T 5.1)	One third of the research infrastructures videos ready
	12	MS35 (T 5.2)	Definition of the catalogue perimeter, architecture, and standards. Release of terms of reference
2	18	D 5.1 (T 5.1)	All research infrastructures videos completed
	24	D 5.4 (T 5.3)	The new toolkit deployed at least two facilities and been used optimization
	24	D 5.5 (T 5.4)	Report on activities after 2 years, including follow-up from participants
3	36	D 5.3 (T 5.2)	Release of the first functional version of the Open NP and data access tools
	36	MS36 (T 5.2)	Identification of existing solutions in the EOSC ecosystem and integration of the Nuclear Physics Ecosystem
4	46	D 5.6 (T 5.2)	Final Report
	48	D 5.2 ((T 5.1)	EURO-LABS users' diversity final report

Maria Jose Gª Borge, Coordinator WP5, IEM-CSIC, Madrid Spain

Summary

- Task 5.1: 36 videos done and place on the webpage
  - 2 missing→ PLACE a counter for visits to the videos
  - Stefani Melandri hired to take care of media: so far no much found in the web→ action urgent
  - Statistics on Gender → to be compared with previous Projects ENSAR2, AIDA, check evolution in a decade → Deliverable M48
- Task 5.2: Next school / all personnel higher / Deliver functional versión of Open NP almost done. (M36)
  - Integration of Nuclear Physics Ecosystem in the European Open Science Cloud (M36)
- Task 5.3: Geoff is working well / personnel hired including the one of CEA that Will start mid-November
- Task 5.4: Basic (at Seville) and advanced (at CERN) schools for 2025 secured → candidates for 2026 under discusión. REMEMBER that we can sponsor also a few students in other schools.

Thanks for your attention !!