
Program Day 1

3rd May 2021

[Zoom link Day 1, click here](#)

Please note that for each topic, the speaker (in blue) will cover the abstracts listed in the point.

09:00 am

WELCOME

- Introduction to EURO-LABS (Navin Alahari) (15+5')
- Goals of the meeting (Maria Colonna) (15+5')

09:40 am

IMPROVED ACCESS

(00:45')

1. Improved access: streamlined, efficient and harmonised; GSI and ALTO user facilities

Salvatore Fiore (salvatore.fiore@roma1.infn.it)

(20+5')

- GSI-TNA (Christoph Scheidenberger)
- Access to the ALTO facility of IJC Lab (Jonathan Wilson)
- Improving access to facilities through better dissemination...(S. Fiore)

2. CLEAR-TNA

(15+5')

Harissopulos Sotiris (sharisop@inp.demokritos.gr)

10:25 am

BEAMS

(01:05')

1. Establishment of technical infrastructure across European laboratories for developments of reliable high intensity target ion source systems (5+5')

João Pedro Ramos (joao.pedro.ramos@sckcen.be)

2. Beams and radioactive molecules

Hannu Koivisto (hannu.koivisto@phys.jyu.fi)

(15+5')

- ERIBS: European Research Infrastructure – Beam Services (H. Koivisto)
- Radioactive molecules for fundamental science (Ruben de Groote)

*****10:55 am-11:10 am → Break*****

3. Beam sharing and alternate operation of target stations at CERN ISOLDE

(5+5')

Sebastian Rothe (Sebastian.Rothe@cern.ch)

4. Machine learning for optimized control and reliability of accelerators and RIB's facilities

Sabrina Appel (S.Appel@gsi.de)

(20+5')

- Artificial Intelligence and Machine learning for accelerator control (Rahul Singh)
- Artificial intelligence for Accelerators and Ion Beam Transport... (Gianfranco Vecchio)
- Advanced RF and cryogenics control...based on machine learning algorithms (Adnan Ghribi)
- Machine learning and AI for RIB facilities (Sebastian Rothe)

11:45 am

NEUTRONS

(00:25')

1. Neutron capture reactions at the new experimental area of the CERN/n_TOF, INFN/Legnaro and ENEA/Frascati facilities, for heavy elements nucleosynthesis and advanced nuclear technologies

Alberto Mengoni (amengoni@bo.infn.it)

(20+5')

- Neutron capture reactions at the new experimental area of n_TOF for heavy elements nucleosynthesis (A. Mengoni)
- The 14 MeV and 2.5 MeV Frascati Neutron Generator FNG: a unique facility for high flux neutron experiments (Salvatore Fiore)
- BELINA: a neutron Time of flight beam line at LNL (Pierfrancesco Mastinu)

12:10 am

OPEN ACCESS DATA

(00:25')

1. Data Management and Services Towards Open Science in Nuclear Physics

Antoine Lemasson (lemasson@ganil.fr)

(20+5')

- Nuclear Physics initiative for Open Science (NuPhOS) (A.Lemasson)
- FAIR experiment data: Findable, Accessible, Interoperable, Re-usable (Thorsten Kollegger)
- A common infrastructure for isotope production data (Sebastian Rothe)
- Chart of Ion Beams for EURO-LABS – CIBEL (Marek Lewitowicz)

12:35 am

DETECTORS (02:30')

(00:35')

1. Facilities and expertise in studies on RIB tracking detectors

Piotr Bednarczyk (piotr.bednarczyk@ifj.edu.pl)

(30+5')

- PRIMADER: Proton and Ion beams for Material and Detectors Research (P. Bednarczyk)
- Self-Powered Particle Detectors for high flux, beam-target secondary emission.... (Salvatore Fiore)
- Development of fast and rad-hard sensors for Radioactive Ion Beams tagging and diagnostics (Paolo Russotto)
- New radiation hard detectors for nuclear physics measurements at RIB facilities (Marco Salvatore La Cognata)
- Proposal for test of high radiation hardness of thin (23 μm) (Andrzej J. Kordyasz)
- Beam monitoring using a-Si:H devices (Leonello Servoli)

- Study of the radiation damage and recovery effects in organic and inorganic scintillators... (Valerii Dormenev)
- RandD inBeamTest (Gilles de France)

01:10 pm -02:15 pm → Lunch

02:15 pm

DETECTORS (continuation)

(01:55')

2. Toolkit for Virtual Access and Remote Operations

Helena Albers (h.albers@gsi.de)

(15+5')

- Toolkit for Remote Operations (H. Albers)
- Remote user access to monitor and control nuclear physics experiments (Constantin Mihai)

3. Developments in full kinematics detection

Manuel Caamano (manuel.fresco@usc.es)

(20+5')

- RIB-AT: exploiting the Active Target Technology at RIB facilities (Thomas Roger)
- Optical TPC developments (Thomas Roger)
- FAZIA@ZD (Simone Valdré)

4. R&D for next generation nuclear physics detectors and experiments with exotic nuclei

Dolores Cortina (d.cortina@usc.es)

(20+5')

- R&D for a Target Recoil Tracking Detector Active target (D. Cortina)
- Design study of a superconducting recoil separator for HIE-ISOLDE (Martel Ismael)
- Advanced Gas-filled Stopping Cells for Exotic Nuclei (Wolfgang R. Plaß)

5. Laser controls, operation and monitoring

(15+5')

Thomas Elias Cocolios (Thomas.cocolios@kuleuven.be)

03:45 pm -04:00 pm → Break

6. Neutron detectors arrays with high efficiency combined to tracking capabilities, and related need of a new large size chamber at INFN-LNS

Giuseppe Politi (giuseppe.politi@ct.infn.it)

(20+5')

- A new modular array for simultaneous detection of neutrons... (G. Politi)
- Development of a high-efficiency neutron detector with direction identification capability (Cristian Massimi)
- Need of a large size chamber at INFN-LNS to exploit RIB... (Paolo Russotto)

04:25 pm

TRAINING

(01:35')

1. Training the next generation

Gert Aarts (g.aarts@ectstar.eu)

(30+5')

- Training the next generation of researchers (ECT*) (G. Aarts)
- Training initiatives for low energy nuclear physics and theoretical developments (Marek Ploszajczak)
- European Training Network for Young Researchers in Nuclear Science (Henner Büsching)
- International schools on Monte Carlo codes (INFN-LNS) (Giuseppe Cirrone)
- Training schools in relevant topics to RiB research (Thomas Elias Cocolios)
- Creation of an international student program or PhD... (Lucia Caceres)
- PhD for RIs (Jonathan Wilson)
- Master classes for training in Nuclear Physics (Julien Piot)

2. Instrumentation and Training for accelerator based Nuclear Spectroscopy and Reaction Dynamics

Silvia Monica Lenzi (silvia.lenzi@pd.infn.it)

(20+5')

- Instrumentation and Training for In-beam Nuclear Spectroscopy and Reaction Studies (S. Lenzi)
- EGD Labs (European Ge Detectors Laboratories) (Juergen Eberth)
- GAMMAPOOL (Karl Hauschild)

3. System of Euro-Labs training and formation schools

Livius Trache (livius.trache@nipne.ro)

(30+5')

- Annual training schools in experimental physics with particle accelerators (L. Trache)
- Training of technical and engineering staffs (Hanna Franberg-Delahaye)
- Summer (or winter) School on Radiation Instr....Synchrotron Radiation (Chiara Guazzoni)
- Small accelerators for supporting nuclear physics studies... (Livio Lamia)
- Training of the next generation scientists in Nuclear Photonics (Dimiter L. Balabanski)
- HONPHETYR: Hands-on nuclear physics - an entry training course for young... (P. J. Napiorkowski)
- Training activity at the LNL target laboratory (LNL Target Laboratory)

06: 00 pm
END OF DAY 1

Program Day 2

4th May 2021

[Zoom link Day 2, click here](#)

Please note that for each topic, the speaker (in blue) will cover the abstracts listed in the point.

09:00 am

INTERDISCIPLINARY ASPECTS

(01:45')

1. Biomedical applications in EURO-LABS

Marco Durante (m.durante@gsi.de)

(30+5')

- Innovative Hadron Applications for Therapy (Aleksandra Ristic Fira)
- IBC@EURO-LABS (Vincenzo Patera)
- Multi-mode imaging for hadron-beam characterization and real-time... (Angela Di Fulvio)
- Microdosimetry for Hadron Therapy (Valeria Conte)
- New challenges for online irradiation control at various nuclear physics accelerators (Denis Dauvergne)
- Measurements of secondary fragments from Galactic Cosmic Rays and the related... (Marie Vanstalle)
- Toward common practices in ion radiobiology experiments (Michaël Beuve)
- Advanced accelerator-based radiobiology for cancer therapy and human space missions (Christine Hellweg)
- Integrating the NURA targeted radionuclide as well as particle therapy preclinical platforms... (Sarah Baatout)
- Investigation of the Oxygen dependency in FLASH irradiation of living cells (Joao Seco)

2. Access to particle therapy beamlines

Marco Pullia (Marco.Pullia@Cnao.it)

(20+5')

- Targeted drug delivery guided by particle beams (Samuel Espana)
- Accurate delivery of short and intense beam pulses and mini-beams (Stefan Both)
- Experimental accelerators approaching medical beam delivery techniques (Fernando Hueso-Gonzalez)
- Laser-driven beams for future clinical applications at LNS-INFN (Pablo Cirrone)
- Unified interfaces for remote planning and conduction of medical related experiments (Thomas Kormoll)
- Particle Therapy Interuniversity Center Leuven (Sofie Isebaert)

3. Karl Johnston (karl.johnston@cern.ch)

(20+5')

- Advancing inter-disciplinary research at European RIB facilities (K. Johnston)
- Proposal for developing a simultaneous (dual-ion beam) irradiation facility at GANIL... (Devesh Avasthi)
- High precision MeV single ion Irradiation (Valentino Rigato)

4. CIRIL - Platform for welcoming interdisciplinary researches at GANIL

Jimmy Rangama (rangama@ganil.fr)

(15+5')

- CIRIL contribution for interdisciplinary research (J. Rangama)
- Atomic and molecular collision physics (Jean-Christophe Pouilly)

10:45 am

TARGETS

(00:45')

1. Challenges for the users of high-intensity beam facilities in Europe

Manuela Cavallaro (manuela.cavallaro@lns.infn.it)

(15+5')

- DRIFT - Developing Research Infrastructure For Target Technologies (M. Cavallaro)
- Double GaTe - Double Gamow Teller resonance search by Nuclear Reactions... (Clementina Agodi)
- Target characterization using Rutherford Backscattering Spectrometry (Mihai Straticiu)

*****11:05 am-11:20 am → Break*****

2. Targets for nuclear physics experiments and radioisotopes production: need for a target technology R&D network strategy

Juan Esposito (esposito@lnl.infn.it)

(20+5')

- Targetry for nuclear and applied physics (J. Esposito)
- Cryogenic targets (Andrea Gottardo)
- A dedicated yield station for target developments (Sebastian Rothe)
- Targets for nuclear Physics (Christelle Stodel)
- Purification 48-Ca (Mickael Dubois)
- Developments for medical isotope production using accelerators (Arnaud Cadiou)

11:45 am

PHYSICS TOPICS

(01:10')

1. Synthesis of new nuclei in the N-E part of the Chart of Nuclides

Catalin Borcea (borcea@nipne.ro)

(20+5')

- Synthesis of new nuclei in the N-E part of the Chart of Nuclides (C. Borcea)
- New methods to produce exotic nuclei (Barbara Sulignano)
- Rare Ion Beams in the Terra Incognita by Multi Nucleon Transfer Reactions (T. Dickel)

2. Probing a new dark boson via Nuclear physics experiments

Carlo Gustavino (carlo.gustavino@roma1.infn.it)

(15+5')

and *Beyhan Bastin* (for the New JEDI collaboration)

- New Judicious Experiments for Dark sectors Investigations (Beyhan Bastin - New JEDI collaboration)
- Search for X17 boson (C.Gustavino)

3. An European interdisciplinary network supporting new nuclear physics experiments with accelerators and plasmas impacting multimessenger astronomy

Marco Salvatore La Cognata (lacognata@ins.infn.it) **(20+5')**

- Extending the reach of RIB facilities by means of indirect methods (M. La Cognata)
- IRIDES - Interdisciplinary Research Infrastructure for nuclear Decays Experiments in plasma Sources (David Mascali)

*****12:55 pm-02:00 pm → Lunch*****

02:00 pm

THEORY – SIMULATIONS

(01:35')

1. Theorists and experimentalists. Strengthening connections, enriching knowledge.

Enrico Vigezzi (vigezzi@mi.infn.it) **(20+5')**

- European Theoretical Network for Nuclear Physics (Francesco Pederiva)
- RIB > Fundamental Science > Light Nuclear Critical Systems (Raquel Crespo)
- Shape coexistence effects on exotic nuclear structure and dynamics (Alexandrina Petrovici)

2. Nuclear-mean-field theoretical expertise in service of the research-infrastructure users

Jerzy Dudek (jerzy.dudek@iphc.cnrs.fr) **(20+5')**

- DUDWARE+: User-Friendly Interface to the Advanced Nuclear-Structure Theory Calculations (J. Dudek)
- Theory-experiment interconnections in studies of nuclear moments conducted at European facilities (Jacek Dobaczewski)

3. Microscopic modelling of heavy-ion collisions and nuclear equation of state data for compact stars

Paolo Napolitani (paolo.napolitani@ijclab.in2p3.fr) **(15+5')**

- Microscopic Modelling of Heavy Ion Collisions (P. Napolitani)
- NESDUU (Rémi Bougault)
- Interfacing theoretical models with Geant4 using Deep Learning (Carlo Mancini-Terracciano)

4. GATE & Geant4 simulations in imaging and particle therapy: status and perspectives

Lydia Maigne (Lydia.MAIGNE@uca.fr) **(20+5')**

- GATE, a simulation platform for imaging and radiation therapy (OpenGATE coll.)
- Interfacing theoretical models with Geant4 using Deep Learning (Carlo Mancini-Terracciano)
- Machine learning in particle therapy for moving organs (Christian Graeff)

03:35 pm

OUTREACH

(00:25')

1. Gender Equality and Diversity, Communication, and Innovation

Ketel Turzo (ketel.turzo@ijclab.in2p3.fr) **(20+5')**

- Gender Equality and Diversity (Jonathan Wilson)
- EURO-LABS-Enabling Innovations (Martina Bauer)
- Abstract about outreach for next ENSAR2 program (INFN LNL)

*****04:00 pm -04:15 pm → Break*****

04:15 pm	DISCUSSIONS	(00:45')
-----------------	--------------------	-----------------

05:00 pm	SUMMARY	(00:30')
-----------------	----------------	-----------------

05:30 pm
END OF DAY 2
END OF THE MEETING