



SPES 2014

Second International Workshop

26th- 28th May, 2014

Laboratori Nazionali di Legnaro (Padova), Italy

SCIENTIFIC PROGRAMME

Monday 26th May (afternoon)

13:30–14:00 Registration

14:00–14:20 **Welcome**, E. NAPPI, *Executive Board of INFN*

Chair: C. Fahlander (Lund University, Sweden)

14:20 – 16:20

14:20 – 14:50 Y. Blumenfeld (IPN, Orsay, France): *Introduction to Physics with SPES Beams*

14:50 – 15:20 G. Prete (INFN, LNL, Italy): *Status of the SPES project*

15:20 – 15:40 A. Andrichetto (INFN, LNL, Italy): *The SPES Target Ion Source complex*

15:40 – 16:00 M. Comunian (INFN, LNL, Italy): *Up-grade of the ALPI post-accelerator*

16:00 – 16:20 A. Russo (INFN, LNS, Italy): *The Medium and High resolution mass separators for the SPES facility*

16:20 – 16:40 *Coffee Break*

Chair: G. de France (GANIL, France)

16:40 – 18:50

16:40 – 17:10 F. Iachello (Yale University, USA): *Scientific opportunities at SPES*

17:10 – 17:30 A. Nannini (INFN, Firenze, Italy): *Set-up for Coulomb-excitation measurements of Radioactive Ions*

17:30 – 17:50 G. Benzoni (INFN, Milano, Italy): *Beta Decay Spectroscopy at SPES*

17:50 – 18:10 A. Gadea (IFIC, Valencia, Spain): *Status of AGATA and the AGATA setup at the SPES ISOL Radioactive Ion beam facility*

18:10 – 18:30 A. Maj (IFJ PAN, Kraków, Poland): *PARIS4SPES - A high-resolution scintillator array for medium- and high-energy gamma rays for experiments at SPES radioactive beams facility*

18:30 – 18:50 L. Corradi (INFN, LNL, Italy): *The Prisma Spectrometer: Status and perspectives*

19:00 Bus to Padova

Tuesday 27th May (morning)

Chair: F. Iachello (Yale University, USA)

9:00 – 10:40

09:00 – 09:25 A. Poves (UAM, Madrid, Spain): *Take a walk to the neutron-rich side*

09:25 – 09:50 A. Bracco (University of Milano, Italy): *Facilities for Nuclear structure and reactions: a NuPECC view*

09:50 – 10:15 R. A. Bark (iThemba Labs, Southafrica): *The iThemba LABS Radioactive Beam Project*

10:15 – 10:40 J. Benlliure (University of Santiago de Compostela, Spain): *Nuclear excitations in nucleon removal processes*

10:40 – 11:00 *Coffee Break*

Chair: P. Van Duppen (KU Leuven, Belgium)

11:00 – 12:40

11:00 – 11:25 F. Azaiez (IPN, Orsay, France): *ALTO : status and future prospects*

11:25 – 11:50 T. Aumann (GSI, Germany): *Status of FAIR and NUSTAR*

11:50 – 12:15 M. Borge (CERN, Switzerland): *The HIE-ISOLDE project and the day-one physics program*

12:15 – 12:40 M. Lewitowicz (GANIL, France): *Status and perspectives of the GANIL/SPIRAL2 facility*

Tuesday 27th May (afternoon)

Chair: M. Borge (CERN, Switzerland)

14:00 – 15:50

14:00 – 14:25 M. Colonna (INFN, LNS, Italy): *Isospin effects in dissipative reactions*

14:25 – 14:50 B. Rubio (IFIC, Valencia, Spain): *Beta decay studies using the gamma Total Absorption Technique at present and future facilities: A personal point of view*

14:50 – 15:10 J. J. Valiente Dobon (INFN, LNL, Italy): *The Galileo project: Status and perspectives*

15:10 – 15:30 D. Mengoni (University of Padova, Italy): *The TRACE GASPARD project: Status and perspectives*

15:30 – 15:50 E. V. Pagano (INFN, LNS, Italy): *The FARCOS project: Status and perspectives*

15:50 – 16:20 *Coffee Break*

Chair: M. Lewitowicz (GANIL, France)

16:20 – 18:05

16:20 – 16:45 D. Vretenar (University of Zagreb, Croatia): *Energy Density Functional Studies of Exotic Nuclear Structure*

16:45 – 17:05 R. Raabe (KU Leuven Belgium): *The ACTAR project at SPES: Status and perspectives*

17:05 – 17:25 E. Bonnet (GANIL, France): *The FAZIA project: Status and perspectives*

17:25 – 17:45 F. Camera (University of Milano, Italy): *LaBr₃:Ce and new scintillators, status and perspectives*

17:45 – 18:05 J. Nyberg (Uppsala University, Sweden): *The NEDA project: Status and perspectives*

18:10 – 19:10 Visit to the SPES project

19.30 Bus to restaurant Baretta (Social Dinner)

23.00 Bus to Padova

Wednesday 28th May (morning)

SAC open session and Presentation of LOIs

Chair: T. Aumann (GSI, Germany)

9:00 – 10:20

09:00 – 09:10 C. Gross (ORNL, USA): **Nuclear Structure of neutron-rich nuclei determined through beta decay spectroscopy of fission fragments**

09:10 – 09:20 T. Kurtukian-Nieto (CENBG and University of Bordeaux, France): **Measurement of the decay characteristics of nuclei around A=90 relevant to r-process nucleosynthesis**

09:20 – 09:30 A. Gottardo (IPN, Orsay, France): **Neutron Decay Spectroscopy at SPES**

09:30 – 09:40 R. Lozeva (IPHC, Strasbourg, France): **Nuclear Moment Studies with Galileo**

09:40 – 09:50 M. Zielinska (CEA, Saclay, France), D. Vernay (IPN, Orsay, France): **Exploring the Z=32 triaxiality corridor towards N=50 via safe coulomb excitation at SPES**

09:50 – 10:00 R. Raabe (KU Leuven, Belgium): **Shell structure in the vicinity of ¹³²Sn with an active target**

10:00 – 10:10 W. Krolas (IFJ PAN, Kraków, Poland): **Entry distributions for fragments produced in deep-inelastic collisions with stable and radioactive beams**

10:10 – 10:20 E. Sahin (University of Oslo, Norway), D. Curien (IPHC, Strasbourg, France), J. Dudek (IPHC, Strasbourg, France): **Search for tetrahedral symmetry in neutron rich Xe-Ba nuclei**

10:20 – 11:00 Coffee break

Chair: A. Vitturi (University of Padova, Italy)

11:00 – 12:30

11:00 – 11:10 J. J. Valiente Dobón (INFN, LNL, Italy): **Spectroscopy studies around ⁷⁸Ni and beyond N=50 via transfer and Coulomb excitation reactions**

11:10 – 11:20 M. Kmiecik (IFJ PAN, Kraków, Poland), G. Benzoni (INFN, Milano, Italy), D. Suzuki (IPN, Orsay, France): **Coulomb excitation tagged by beta decay: The onset of deformation in the n-rich Y isotopes**

11:20 – 11:30 D. Mengoni (University of Padova, Italy), G. de Angelis (INFN, LNL, Italy), M. N. Erduran (Istanbul Sabahattin Zaim University, Turkey): **Direct reactions at SPES to probe: Nuclear magicity at Z~50 and N~82, NN pairing and neutron capture cross section via the surrogate method**

11:30 – 11:40 G. Rainovski (University of Sofia, Bulgaria): **Study of proton-neutron balance of quadrupole-collective states of even-even neutron rich Te, Xe and Ba isotopes**

11:40 – 11:50 S. D. Pain (ORNL, USA): **Transfer reaction measurements at SPES for r-process nucleosynthesis**

11:50 – 12:00 G. Politi (INFN and University of Catania, Italy), E De Filippo (INFN, Catania, Italy), J.D. Frankland (Ganil, France), S. Pirrone (INFN, Catania, Italy), P. Russotto (INFN and University of Catania, Italy): **Isospin dependence of compound nucleus formation and decay**

12:00 – 12:10 B. Szpak (INP, Kraków, Poland), B. Fornal (INP, Kraków, Poland), S. Leoni (University of Milano, Italy): **Structure of Sb nuclei around ¹³²Sn as a testing ground for realistic shell model interactions**

12:10 – 12:20 S. Leoni (University of Milano, Italy), A. Maj (IFJ PAN, Kraków, Poland): **Heavy-ion binary reactions as a tool for detailed gamma spectroscopy in exotic regions**

12:20–12:30 S. Leoni (University of Milano, Italy), B.Fornal (INP, Kraków, Poland): **Search for deformed oblate structures in ⁹⁶Y by gamma spectroscopy and cluster transfer reactions with a ⁹⁵Sr SPES beam**

12:30 – 13.10 Signature of the Italy-Poland LEA agreement (Prof. Giovanni Fiorentini, LNL Director – Prof. Marek Jezabek, Director General of the Institute of Nuclear Physics PAN – Prof. Adam Maj, Chair of the COPIN Council)

Wednesday 28th May (afternoon)

SAC open session and Presentation of LOIs

Chair: B. Fornal (IFJ PAN, Kraków, Poland)

14:20 – 16:00

- 14:20 – 14:30 E. G. Lanza (INFN, Catania, Italy), D. Mengoni (University of Padova, Italy): **Low-lying dipole excitation via nuclear probes in exotic nuclei**
- 14:30 – 14:40 D. Pierroutsakou (INFN, Napoli, Italy): **Study of the Dynamical Dipole mode with the SPES radioactive beams**
- 14:40 – 14:50 S. Barlini (INFN, Firenze, Italy): **Prompt collective oscillations with exotic beams**
- 14:50 – 15:00 E. Kozulin (JINR, Dubna, Russia): **Measurement of cross sections for the production of neutron rich heavy-nuclei using the beams of accelerated fission fragments**
- 15:00 – 15:10 E. Kozulin (JINR, Dubna, Russia): **The search of double magic superheavy nucleus in the region of neutron shell at N=184**
- 15:10 – 15:20 S. Szilner (University of Zagreb, Croatia), J. J. Valiente Dobón (LNL, Italy): **Neutron-rich heavy nuclei explored via multinucleon transfers**
- 15:20 – 15:30 L. Corradi (INFN, LNL, Italy): **Studies of pair transfer processes with the SPES beams**
- 15:30 – 15:40 P. Bednarczyk (IFJ PAN, Kraków, Poland): **High-spin gamma ray spectroscopy of heavy, octupole deformed Ac and Fr nuclei produced in fusion evaporation reactions with the intense A~90 Rb radioactive beams at SPES**
- 15:40 – 15:50 A. Di Pietro (INFN, LNS, Italy): **Study of cluster states using the Resonance Scattering Method with the SPES Beams**
- 15:50 – 16:00 L. Morelli (INFN and University of Bologna, Italy): **Projectile and Compound Nucleus Decay with light beams provided by SPES**

16:00 – 16:30 Coffee break

Chair: A. Olmi (INFN, Firenze, Italy)

16.30 – 18.10

- 16:30 – 16:40 T. Marchi (INFN, LNL, Italy): **Preequilibrium emission: a tool to study dynamic effects and clustering structure in exotic nuclei**
- 16:40 – 16:50 B. Melon (INFN Firenze, Italy): **Coulomb-excitation measurements in nuclei around ¹³²Sn**
- 16:50 – 17:00 G. Casini (INFN, Firenze, Italy): **Isospin dynamics and thermodynamics in n-rich heavy-ion induced reactions**
- 17:00 – 17:10 G. Benzoni (INFN, Milano, Italy): **Study of the shell structure and order to chaos transition in warm rotating nuclei with the radioactive beams of SPES**
- 17:10 – 17:20 V. Modamio (INFN, LNL, Italy): **Shape coexistence in Kr isotopes towards N=60**
- 17:20 – 17:30 E. Vardaci (University of Napoli, Italy): **Probing the Island of Stability with SPES beams**
- 17.30 – 17:40 M. Milin (University of Zagreb, Croatia): **Spectroscopy of proton rich light nuclei with the radioactive ¹⁷F beam**
- 17.40—17:50 B. Fernandez Dominguez (University of Santiago de Compostela, Spain): **Direct Reactions with exotic nuclei in the r-process using an active target**

17:50 – 18:10 M. Taiuti (Head of INFN nuclear physics committee) **Closing Remarks**

18:20 Bus to Padova

Thursday 29th May (morning)

SAC closed session (Chair: T. Aumann (GSI, Germany))