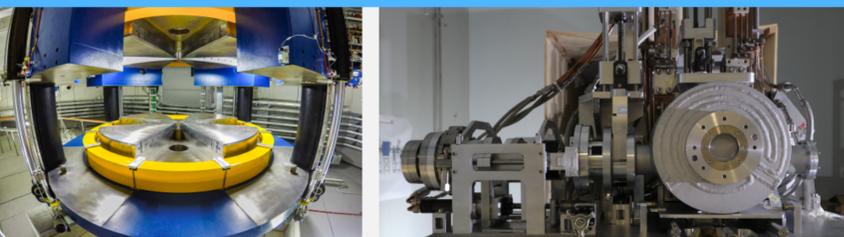




Nuclear Physics Mid Term Plan in Italy

Laboratori Nazionali di Legnaro

Session LNL
11-12 April 2022



Organizing Committee

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The workshop is organized in specific working groups that will report their activities in the final event. These working groups will address the future research opportunities at LNL.

Working Groups

◆ Nuclear Astrophysics

Topic

- Nucleosynthesis up to the iron peak
- Nucleosynthesis of trans-iron elements
- Nuclear astrophysics theory

◆ Nuclear Structure

- Shell evolution
- Light to medium-mass exotic nuclei
- $N \sim Z$ nuclei and isospin symmetry
- Deformation and collective states

◆ Nuclear Reactions and Dynamics

- Physics overview: alpha clustering, dynamics and structure, thermodynamics, equation of state, collective motions
- Mechanisms/Tools: fusion-evaporation and pre-equilibrium emission
- Mechanisms/Tools: transfer, particle spectroscopy
- Mechanisms/Tools: fission and sub-barrier fusion

◆ Application

- Nuclear cross sections measurements and modelling for direct radionuclide production and neutron beam lines at SPES
- ISOL and laser applications at the SPES facility
- Development, characterization and modifications of materials for applied nuclear physics

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