

Contribution ID: 146

Type: Oral

Preparation for future photoneutron experiments at ELI-NP

Monday, 31 August 2015 14:30 (15 minutes)

The large scale facility Extreme Light Infrastructure - Nuclear Physics (ELI-NP) [1], currently under development, is the one of the three pillars of the Extreme Light Infrastructure Pan-European initiative which is dedicated to nuclear physics with extreme electromagnetic fields. A high power laser system and a very brilliant gamma beam are the main research equipment at the core of ELI-NP. The gamma beam system (GBS) will produce through laser Compton scattering highly polarized (> 99%), energy tunable γ -ray beams with spectral density of 10^4 photons/s/eV, ranging from 200 keV to 19.5 MeV and with a bandwidth better than 0.5%. Using the brilliant GBS at ELI-NP, we propose to investigate the excitation, and particle and gamma decay of Giant Resonances. We plan to develop a multipurpose neutron and gamma radiation detectors. We present here the results of Geant4 simulations of this array and also the challenges raised by the gamma beam time structure.

[1] N.V. Zamfir, EPJ Web of Conf. 66, 11043 (2014).

Primary author: FILIPESCU, Dan Mihai (Extreme Light Infrastructure – Nuclear Physics (ELI - NP) / Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania)

Co-authors: Dr MATEI, Catalin (Extreme Light Infrastructure – Nuclear Physics (ELI - NP) / Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania.); Prof. CAMERA, Franco (Dipartimento di Fisica, Università degli Studi di Milano, via Celoria 16, I - 20133 Milano, Italy); Prof. UTSUNOMIYA, Hiroaki (Department of Physics, Konan University, Okamoto 8 - 9 - 1, Higashinada, Kobe 658 - 8501, Japan); Ms GHEORGHE, Ioana (Extreme Light Infrastructure – Nuclear Physics (ELI - NP) / Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania); Prof. SIN, Mihaela (Faculty of Physics, University of Bucharest, 077125, Bucharest, Romania); Dr TESILEANU, Ovidiu (Extreme Light Infrastructure – Nuclear Physics (ELI - NP) / Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania); Dr GLODARIU, Tudor (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania); Dr GLODARIU, Tudor (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania); Dr GLODARIU, Tudor (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania); Prof. VARLAMOV, Vladimir (Lomonosov Moscow State University, Department of Physics, Moscow, 119991 Russia)

Presenter: FILIPESCU, Dan Mihai (Extreme Light Infrastructure – Nuclear Physics (ELI - NP) / Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN - HH), 30 Reactorului St., Bucharest - Magurele, 077125, Romania)

Session Classification: Accelerators and Instrumentation I