General outline of research topics feasible in the nearest future at HIL

E. Grodner[1]

1) National Centre for Nuclear Research, Warsaw, Poland

Future of low energy nuclear physics at the national level is a subject that requires the speaker's high prediction skills. As shown by books published by futurologists over the decades (with the exception of Stanisław Lem), the more detailed the forecast, the more it deviates from reality. That's why this presentation will show general outlines of ideas, which can be developed in the nearest future at HIL in cooperation with NCBJ nuclear research group.

Low hanging fruits i.e., topics that continue the research already carried out, will be presented first. Low hanging fruits include: standard gamma-ray spectroscopy of heavy elements studied by EAGLE HPGe array, fast-timing methods development and research, lifetime measurements with fast-timing techniques utilizing EAGLE-EYE setup consisting of 24 LaBr detectors.

In a somewhat more distant future, one can begin to study the magnetic dipole moments in a spin-precession methods with help of the EAGLE-EYE setup that combines excellent energy resolution (HPGe) for gating and perfect timing (LaBr array).

The most advanced technique that requires new cyclotron capabilities will be the magnetic moments research in the reverse kinematics experiments. The known recoil in vacuum technique could be applied and g-factors of short living states in heavy elements can be studied.