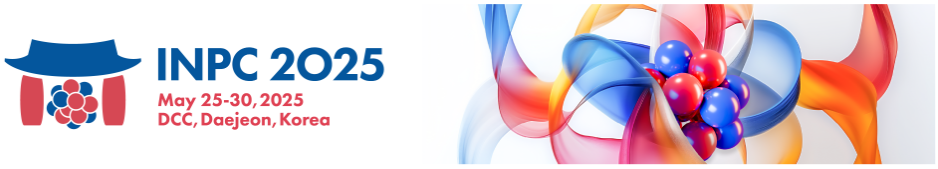

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Recent activities and possible studies at KoBRA

KoBRA (KOrea Broad acceptance Recoil spectrometer and Apparatus) [1,2] is a multi-purpose low energy (~1 to 40 MeV/u) nuclear physics facility at IRIS (Institute for Rare Isotope Science) and was successfully completed for beam commissioning in the last two years [3]. In addition to producing RI beams with 40Ar8+ stable ion beams, 25Na beams from the ISOL system were accelerated through SLC3 to an energy of ~16 MeV/u and successfully identified at KoBRA.
Two-step RI beam production studies using ISOL beams and KoBRA, transfer reaction measurements with state-of-art silicon and high-purity germanium detector system, direct measurements of (a,p), (p,a) reactions for nuclear astrophysics studies with high-end active target system are planned. A Wien filter is currently being installed for velocity selection of ion beams, enabling precise production and separation of isotopes for nuclear physics experiments. Cryogenic gas cell and gas jet target systems are under development for integration into the KoBRA F0 area, facilitating RI beam production through direct reactions and direct capture reaction measurements. In this presentation, details of the recent activities and possible studies at KoBRA will be presented.

[1] K. Tshoo et al., Nucl. Instrum. Methods Phys. Res. B 376 (2013) 188.
[2] K. Tshoo et al., Nucl. Instrum. Methods Phys. Res. B 541 (2023) 56.
[3] D. Jeon et al., J. Korean Phys. Soc. 65 (2014) 1010.

Primary authors: Dr KWAG, Minsik (IRIS/IBS); AHN, Deuk Soon (Institute for Basic Science); Dr AHN, Sunghoon(Tony) (Center for Exotic Nuclear Studies, Institute for Basic Science); AKERS, Charles (Institute for Basic Science); HAM, Cheolmin (Institute for Rare Isotope Science); HWANG, Jongwon (Center for Exotic Nuclear Studies, Institute for Basic Science); KIM, Dahee (Center for exotic nuclear studies, Institute Basic Science); KIM, Dong Geon (Institute for Rare Isotope Science); KIM, Eunhee (Institute for Basic Science); KIM, Jaesung (Institute for Basic Science); KIM, Jae Cheon (IBS); KIM, Mijung (IRIS/IBS); KWAK, Donghyun; LEE, CheongSoo (IBS); LEE, Kwang-Bok (RISP); LEE, Sangjin (IBS); LEE, Woojun (KOREA AEROSPACE RESEARCH INSTITUTE); Ms LIM, Chaeyoung (IBS(Institute for Basic Science) / Korea University); OH, Geonhee (Institute for Rare Isotope Science (IRIS), Institute for Basic Science (IBS)); PYEUN, Seong Jae (RISP, IBS); SON, CHANGWOOK (Institute for Basic Science); TSHOO, Kyoungho (RISP/IBS)

Presenter: Dr KWAG, Minsik (IRIS/IBS)

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