

## Investigation of Multi-nucleon Transfer using a Recoil Separator

*Monday, 16 October 2023 15:40 (30 minutes)*

Recoil separators are used for identification of rare channels in a nuclear reaction amidst overwhelmingly intense background events. The Inter-University Accelerator Centre (IUAC), New Delhi, houses two recoil separators, namely, the Heavy Ion Reaction Analyzer (HIRA) and the HYbrid Recoil mass Analyzer (HYRA). These two devices are primarily used for the study of fusion dynamics, utilising heavy ion beams from the Pelletron and the superconducting linac. A conventional recoil separator can also be used for identification of multi-nucleon transfer (MNT) channels in heavy ion-induced reactions. In this case, the forward-recoiling target-like ions are transported to the focal plane of the separator and measured by a position-sensitive detector. In my talk, I shall present our recent measurements on MNT reactions with the HIRA and efforts to understand the mechanism of nucleon transfer in terms of coupled reaction channels (CRC) calculations. Plans with the HYRA, using beams from the High Current Injector (HCI) which will be available in the near future, will also be outlined.

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**Session Classification:** Section 3