

Recoil separator for ReA12 workshop

http://people.nsl.msu.edu/~amthor/RecSepReA12_2014workshop.html

NSCL, MSU, East Lansing, Michigan

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This workshop is in preparation for the Low Energy Community Meeting – Now DNP Town Meeting on Nuclear Structure and Nuclear Astrophysics, to be held August 21-23 at Texas A&M University. It immediately follows the High Rigidity Spectrometer [workshop](#) also to be held at NSCL.

Click: [Workshop website](#)

Click: [Register for the workshop](#) (there is an option for online participation)

Click: [Submit a new physics case](#)

The reacceleration of secondary beams at the present NSCL Coupled Cyclotron Facility (CCF) and in the future at FRIB will provide high quality rare isotope beams with energies up to about 12MeV/u. ReA3, which will provide energies up to 6MeV/u, is presently operating. A high energy upgrade to ReA12 is a high priority and we hope to have it available by the time FRIB is completed. The energy domain of ReA12, up to ~12MeV/u for uranium and higher energies for lighter species (see [sample beams](#) under “Documents” on the website above for more details) is ideal for studies involving many reaction types induced by rare isotope beams, such as fusion, direct transfer, massive transfer, multiple Coulomb excitation and others. A high acceptance recoil spectrometer and associated detector systems are needed to enable studies of such reactions. Discussion about possible options was initiated several years ago in other meetings of the FRIB user community and advanced preliminary designs have now been prepared.

At last year’s satellite workshop and working group meeting in August 2013 (see the previous conference website for some details at the website above), the decision was made to focus on the two vacuum separator options, (ISLA and SUPERB) while considering the possibility of gas-filled operating modes in these systems. Specific information on physics cases to be pursued with such a device was solicited from the community shortly afterward. To date, 13 separate physics cases have been submitted representing a wide variety of research areas in nuclear physics, experimental techniques, and institutions. A final collection of additional proposed physics cases will be completed as part of registration for this workshop. These physics cases will serve as basis for the selection of the spectrometer type. The organizers continue to work with the FRIB Users Organization to chart a path forward to proposal, construction, and successful operation of a recoil separator for ReA12 to meet these physics goals.

The goal of this workshop is to produce a detailed whitepaper draft, laying out the physics case for the recoil separator, and to endorse a particular separator option to meet the ambitious goals of this physics case. The result of the workshop will be presented and discussed at the Low Energy Community Meeting in August that this year is co-opted by the Low Energy Town Meeting for the upcoming NSAC Long Range Plan (LRP). Useful information and supporting documents will be circulated to registered participants by June 30th to allow some time for their review prior to the workshop.

Important dates:

- May 28th: Beginning of registration
- June 21st: Deadline for registration and submission of proposals describing new physics cases
- June 30th: Date for Final program and documents to be distributed

The organizing Committee:

- Matt Amthor, Bucknell University, m.amthor at bucknell.edu
- Wolfgang Mittig, NSCL , mittig at nsl.msu.edu
- Jerry Nolen, Argonne National Laboratory, nolen at anl.gov