

New vistas at energies around the Coulomb barrier at GANIL

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Finding avenues towards uncovering new phenomenon in regions of extreme of isospin both in nuclear structure and/or its effects on the reaction mechanism is one of the goals of current and next generation facilities. At energies near the Coulomb barrier, reactions are characterized by a delicate interplay between mean-field (potential) and the collective and nucleonic degrees of freedom. Thus reactions studies with beams nuclei both far and near from stability provide a unique opportunity to measure and understand the many facets of multidimensional tunneling and also provide us with a very powerful arena for the production of neutron rich nuclei.

The talk we will highlight results from two of the three axis at GANIL using heavy stable beams and light radioactive ion beams. We will present recent physics highlights obtained mainly using the EXOGAM gamma array in conjunction with the large acceptance spectrometer VAMOS the neutron wall at energies around the barrier. In particular new limits reached in beam gamma spectroscopy of neutron rich nuclei at these energies using heavy stable beams around and complete reactions studies using borromean beams to understand the influence of the structure on the reaction mechanism will be presented. Future plans for increasing the measurement sensitivity at GANIL for accessing presently unattainable goals will also be presented.

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