Nuclear Reactions With Rare Isotope Beams

• **New facilities = new capabilities.**
  - Stable beams (A≈100): N/Z=1.24 -1.48
  - CCF: N/Z=1.14 -1.64, E/A<180 MeV.
  - RIA: N/Z=1.06 -1.72, E/A<360 MeV.

• **Isospin dependence of EOS**
  - Density dependence of the symmetry term.
  - Constraints on symmetry from nuclear structure and from microscopic theory.
  - Relevance to dense astrophysical environments.
  - Prospects for experimental determination.

• **Dynamics at extreme isospin asymmetry:**
  - Isospin dependence of the liquid-gas phase transition.
  - Fission barriers far from the valley of stability.
  - Nuclear level densities far from the valley of stability.