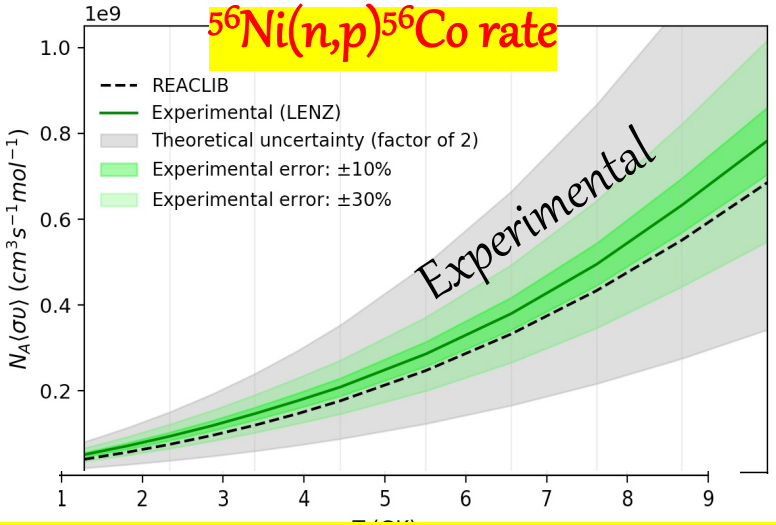
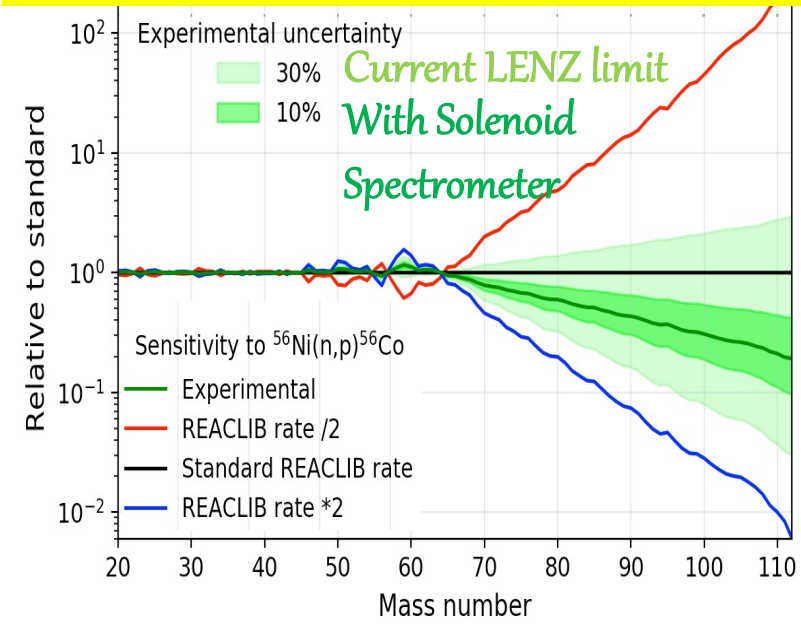
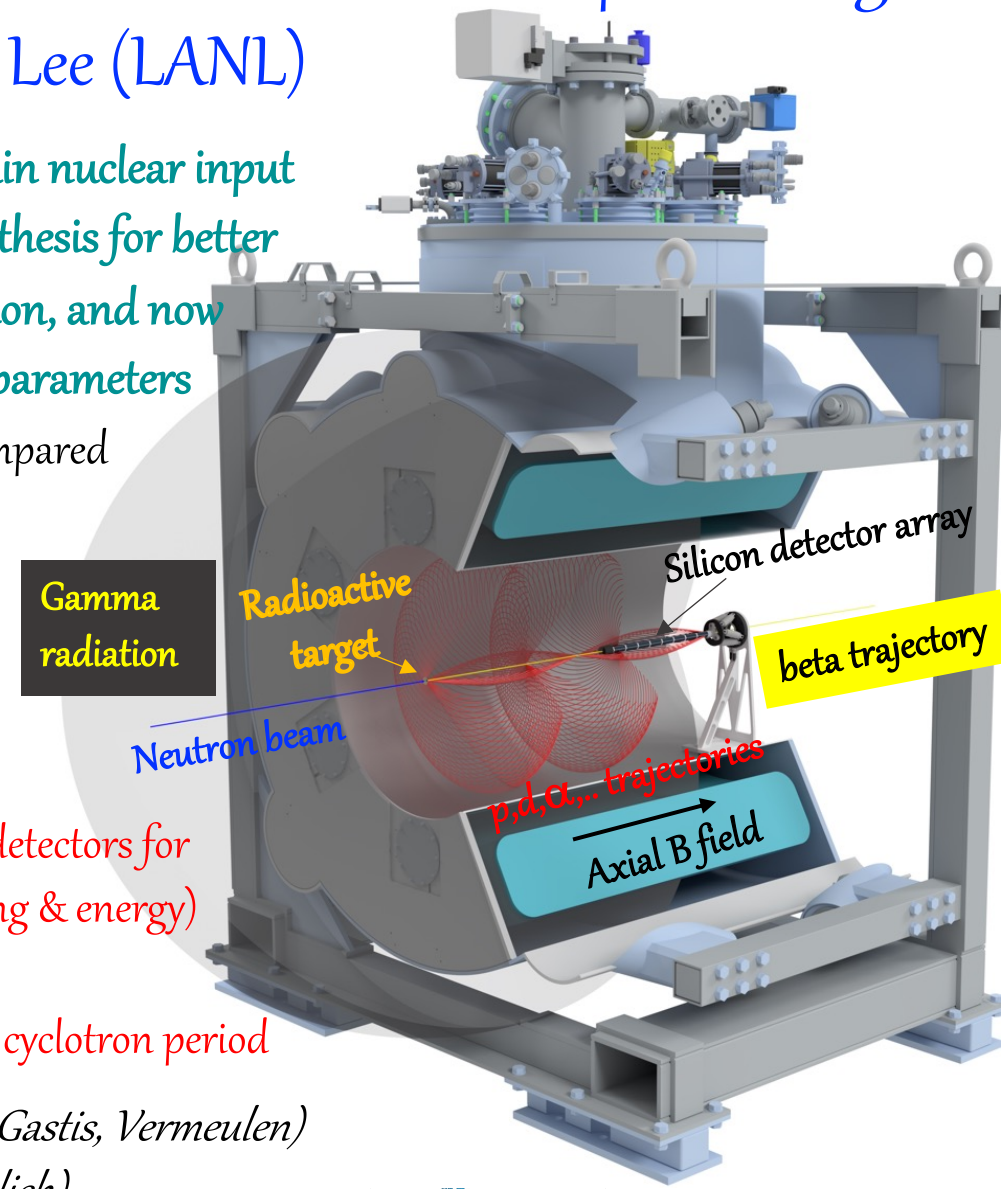
Optimized solenoid spectrometer for direct reaction studies with radionuclides to provide *high fidelity* data for astrophysics and applications : Hye Young Lee (LANL)





The experimental LANL rate help constrain nuclear input uncertainty during np-process nucleosynthesis for better understanding of heavy element production, and now we're further investigating astrophysical parameters

- Experimental reaction rates data are compared with statistical calculation & REACLIB
- Current uncertainties are ~30 %, but aiming for 10 %



Optimized solenoidal spectrometer at LANSCE provides;

--Substantially reduced radiation damage to detectors for achieving best experimental resolutions (timing & energy)

--Solid angle coverage up to ~ 2π

—Different charged particles are identified by cyclotron period

Collaboration Team from LANL (Lee, Kuvin, Gastis, Vermeulen) CMU (Perdikakis, Tsintari) and NCSU (Frohlich)

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LANSCE Los Alamos Neutron Science Center