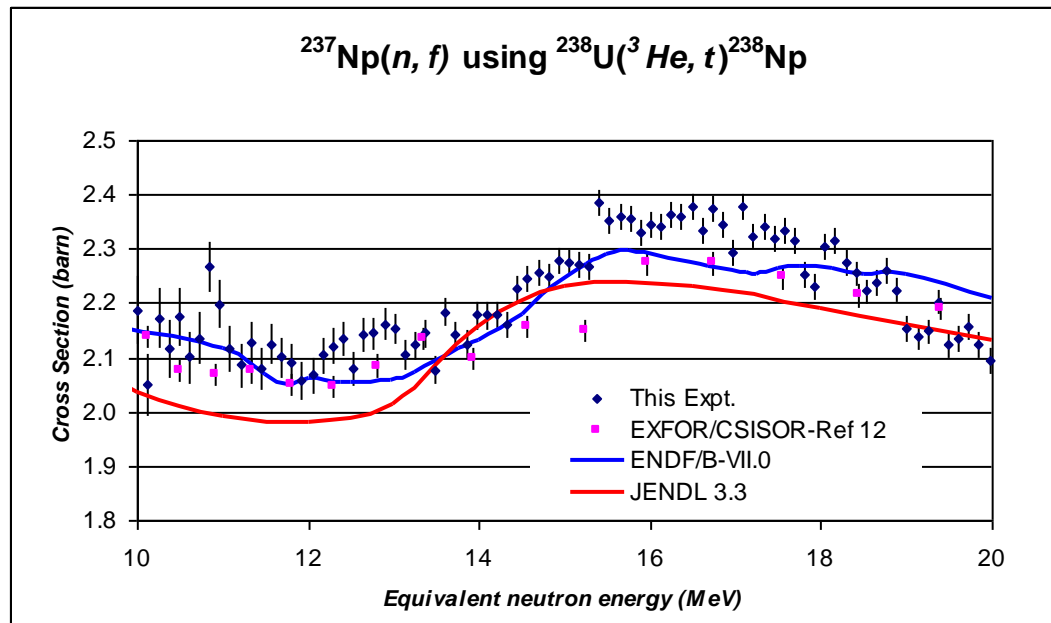


Evaluation of Continuum Particle/ γ -ray Data

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Introduction

Measurements of particle/ γ -ray data has become a major activity of the nuclear structure community.

- **Statistical properties** of the nucleus at high level densities – level density, photon strength, spin/parity
- **Surrogate reaction** measurements of nuclear cross sections
- **Nuclear transport** calculations – RIPL
- **Nuclear astrophysics** calculations – nucleosynthesis

These data are not evaluated in ENSDF or other data files

- These data would **complete ENSDF** coverage
- ENSDF would be the **natural repository** for this data
- The **Oslo Cyclotron group** is interested in leading this effort

Photonuclear Data



International Atomic Energy Agency

INDC(NDS)-394
Dist. GN+NM

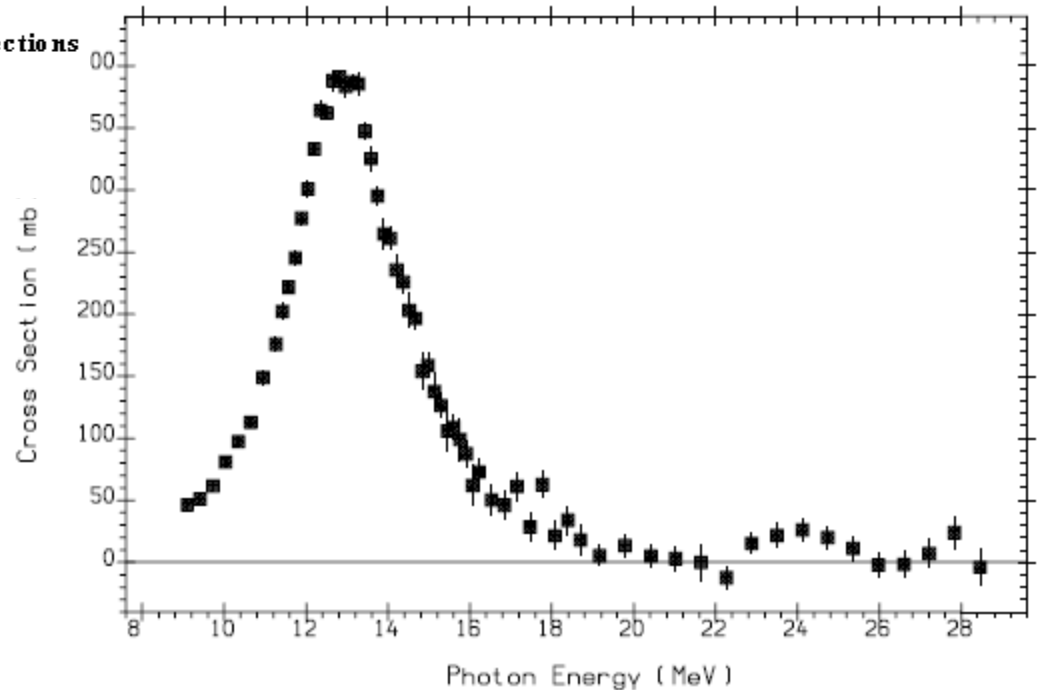
INDC INTERNATIONAL NUCLEAR DATA COMMITTEE

Atlas of Giant Dipole Resonances

Parameters and Graphs of Photonuclear Reaction Cross Sections

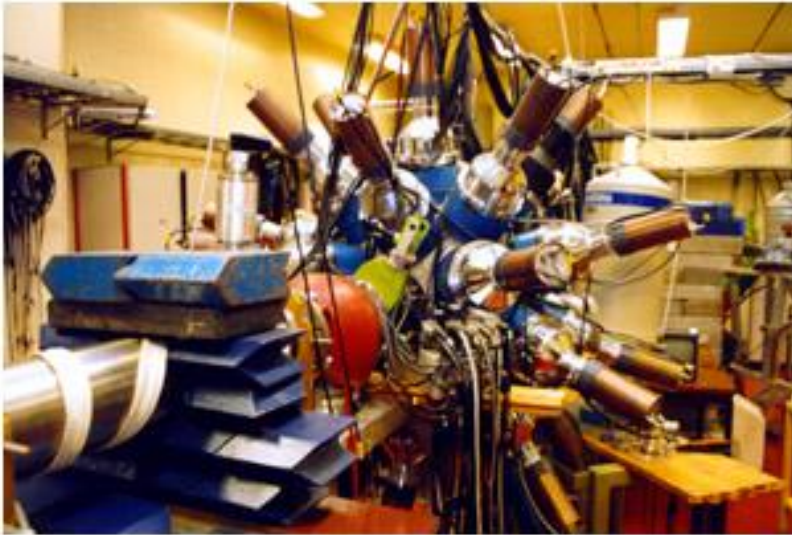
A. V. Varlamov, V. V. Varlamov, D. S. Rudenko, M. E. Stepanov

A starting point for
evaluating continuum
data

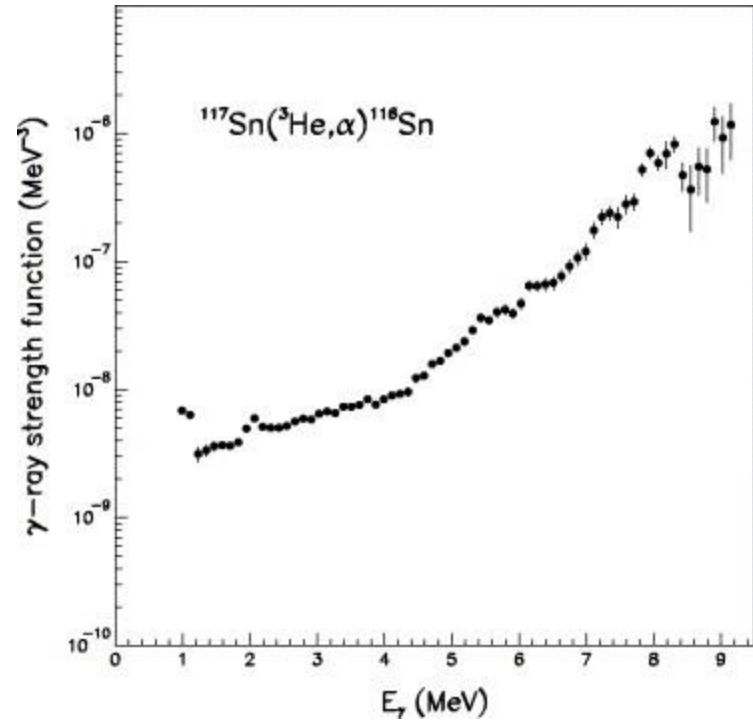


(74-W-186(G,N)74-W-185)+(74-W-186(G,N+P)73-TA-184)
Positron annihilation
L0016015 J,PR,185,1576,6909 B.L.BERMAN+

CACTUS – Oslo Cyclotron



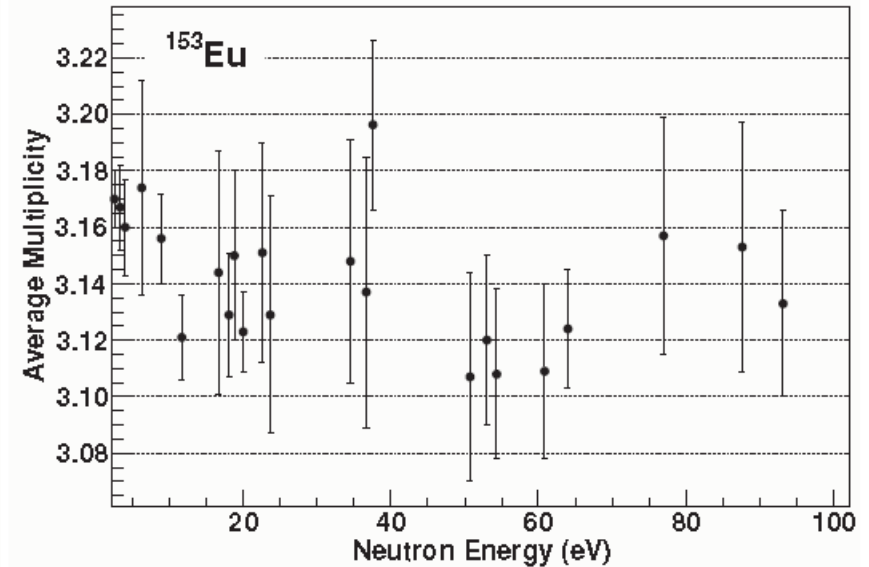
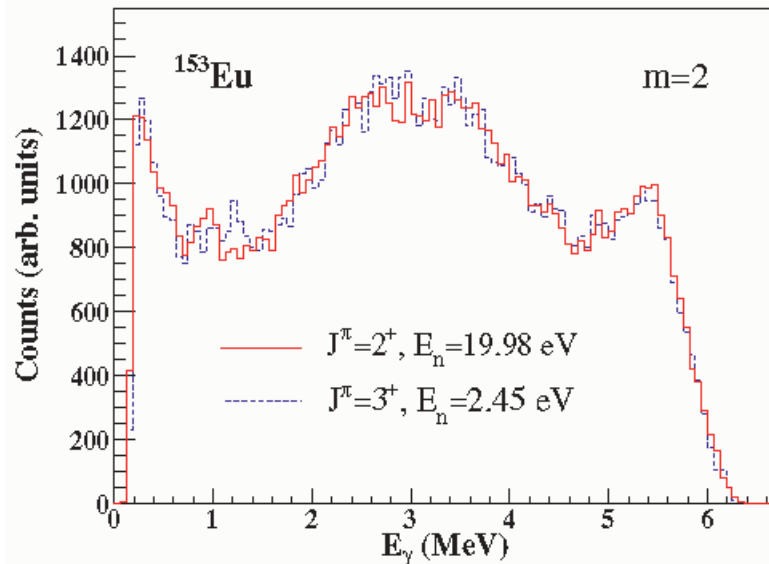
CACTUS – 27 NaI(Tl), E- Δ E
particle detectors.
Planned upgrade to 27
LaBr₃(Ce) detectors (3%
resolution, 165% efficiency)



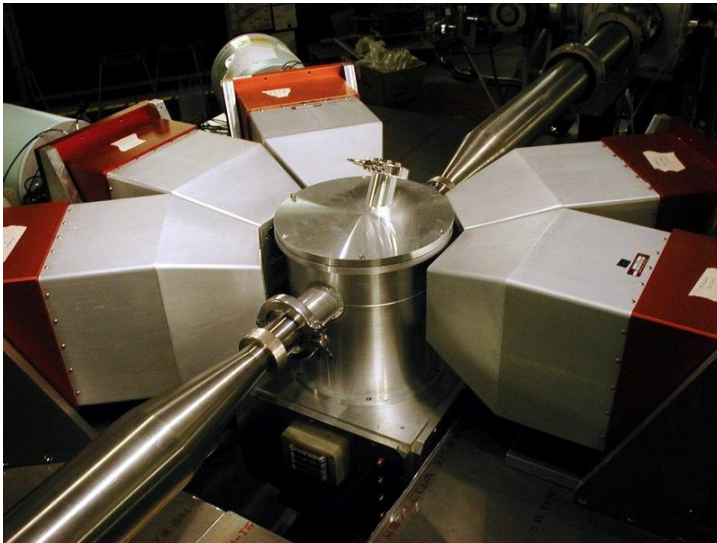
DANCE - LANL



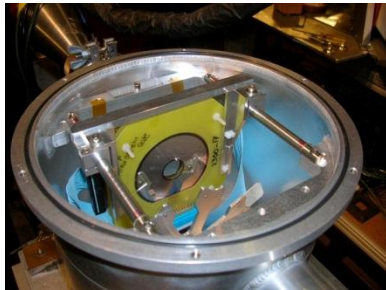
DANCE - a 4π spherical array of 160 BaF2 scintillators equipped with PMT's.



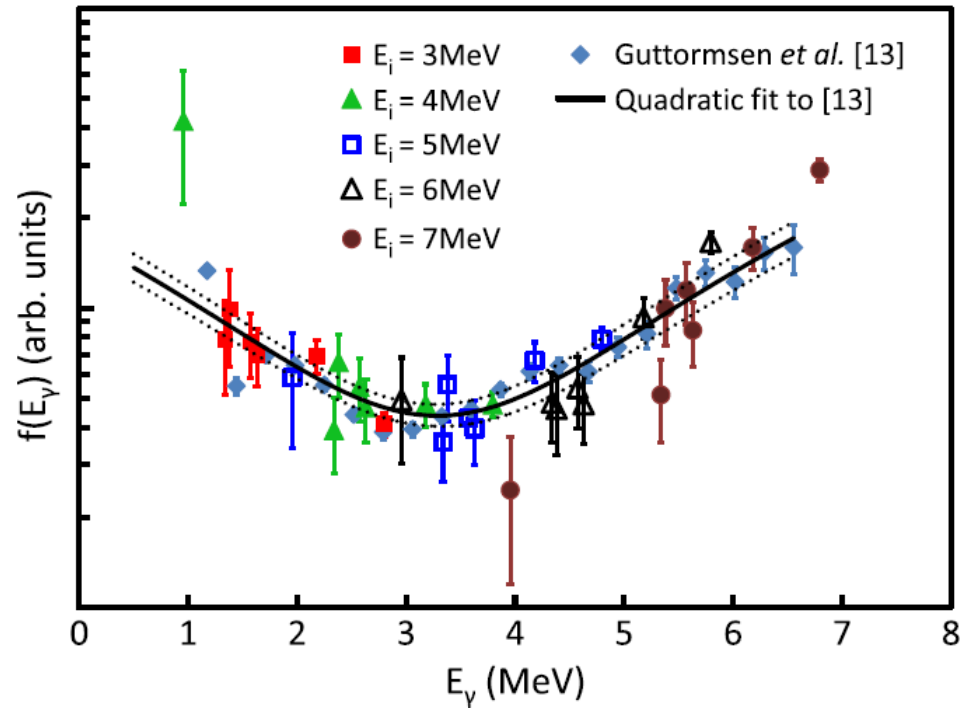
STARS/LiBeRACE – Texas A&M



Target Chamber+6 “Clover” Ge



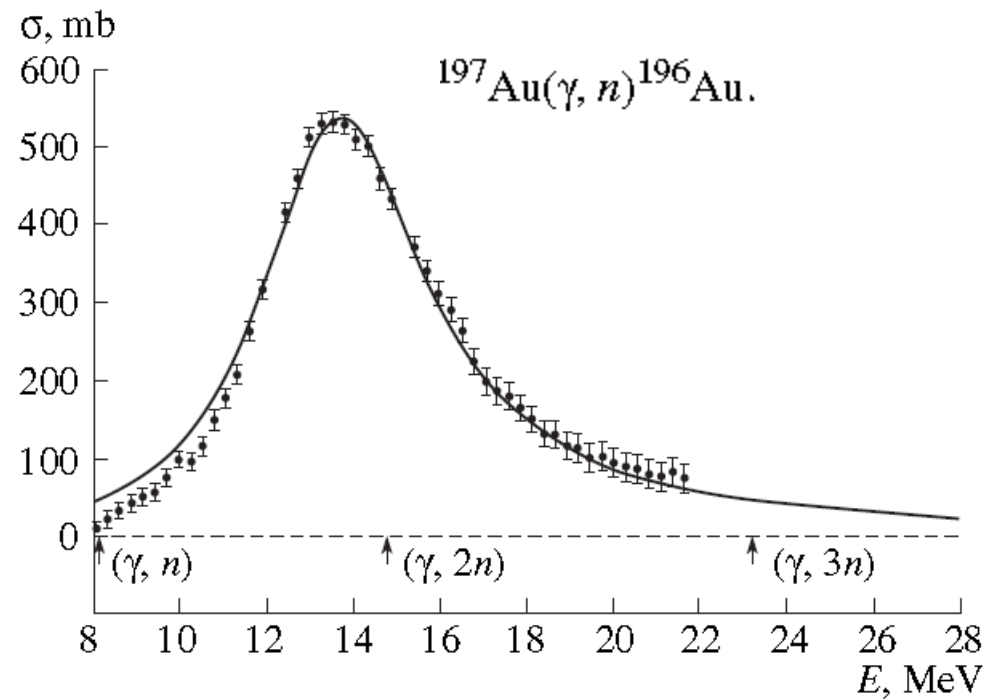
Interior w/S2 Si detectors



Photonuclear – Flerov Laboratory



Microntron MT-25 –
5-25 MeV electrons, 25 ma



Next Steps

- Proposed IAEA Consultants Meeting – 2013
- Proposed IAEA CRP on the Evaluation of Continuum Particle/ γ -ray data
- Seek funding – Oslo University, ERINDA, ...
- Integration into the ENSDF effort