



Cross-sections...











Production of N = 126 nuclei





Calculations done using: http://nrv.jinr.ru/nrv/webnrv/grazing/









110

S

N

P

Yb

Er

Dy

Gd

Sm

Nd

Α

AME16



From Mg to Cf









The N = 126 factory









Area 126











The N = 126 Factory gas cell



UNIVERSITY OF NOTRE DAME

Thermalize MNT reaction products



B.J. Zabransky, G. Savard





The N = 126 Factory dipole magnet



Resolution of M/ Δ M ~ 1000 to remove non-isobars













The N = 126 Factory RFQ



Cool and bunch the RIBs







A. Valverde









The N = 126 Factory MRTOF



Deliver isotopically pure beams to experiments Assembled and tested at Notre Dame. Now at ANL.







B. Schultz, J. Kelly, B. Liu, M.B.











NUSTAR EMMI workshop, Sep 16, 2021

NOTRE DAME



MR-TOF optimization



- Optimized ion optics for MR-TOF using beams from cooler buncher at N=126 Factory using a particle swarm code.
- Obtained resolving power reaching 100,000.









Conclusion



- The ND MR-ToF will be used to remove isobaric contamination from the beam produced at the N = 126 factory as well as allowing for mass measurements.
- The MR-ToF has been commissioned off-line at Notre Dame and mass resolving powers reaching 70,000 has been observed.
- Ion optical simulations and design of the N=126 Factory are completed.
- Platform holding the cooler-buncher and MR-ToF has been assembled.
- Coffin holding the gas catcher is in Area N126.
- The Canadian Penning Trap will begin to move to the N=126 Factory early next year.
- First beams expected in 2022.





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