

Overview of the Needs for Nuclear Structure & Nuclear Astrophysics

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Nuclear Structure and Nuclear Astrophysics Needs

What:

Nuclear Structure: nuclei at the limits

Nuclear Astrophysics: most (all?) astrophysical scenarios

Where:

FRIB at MSU, ATLAS at ANL, the 88-Inch Cyclotron at LBNL, the TAMU Cyclotron Institute, and TUNL.



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Nuclear Structure and Nuclear Astrophysics Needs

Nuclear Astrophysics: most (all?) astrophysical scenarios:

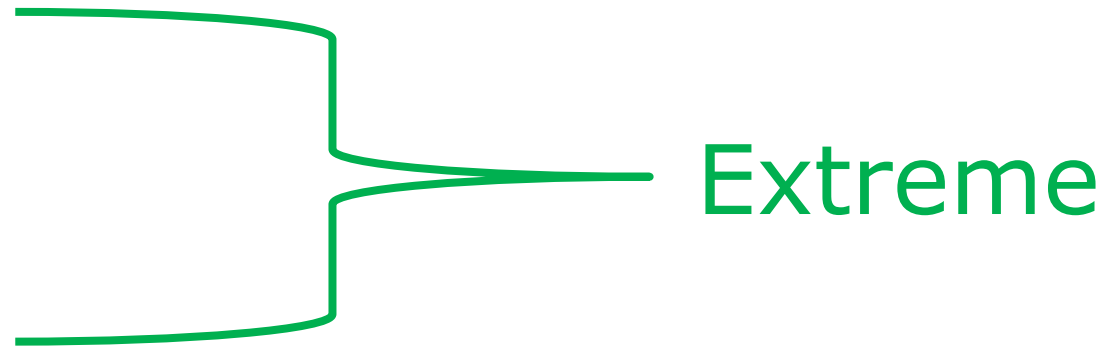
- ▶ Supernovae
- ▶ White dwarf mergers
- ▶ Neutron star collisions
- ▶ X-ray bursts
- ▶ Sun, main sequence stars
- ▶ Hydrogen burning, helium burning
- ▶ Classical novae
- ▶ Big Bang nucleosynthesis



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Modest Temp



all nuclear data is important



Nuclear Structure and Nuclear Astrophysics Needs

Tomorrow's Session One:

'Reactions on Unstable Nuclei'

Especially the seven talks after the coffee break!



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NS & NA and the 'Human Pipeline' Pathways'

Office of Science Graduate Student Research (SCGSR) Program

Eligibility

Benefits

Participant Obligations

How to Apply

Information for Laboratory
Scientists and Thesis Advisors

Key Dates

Frequently Asked Questions

Reporting Harassment or
Discrimination

Contact

Office of Science Graduate Student Research (SCGSR) Program



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NS & NA and the 'Human Pipeline' Pathways'

I. Convergence Research Topical Areas

- (a) Microelectronics (ASCR, BES, HEP, and NP)
- (b) Data Science (ASCR, BES, BER, FES, HEP, and NP)
- (c) Conservation Laws and Symmetries (HEP and NP)
- (d) Accelerator Science (ASCR, BES, BER, FES, HEP, NP, DOE IP, and ARDAP)



NS & NA and the 'Human Pipeline' Pathways'

VII. Nuclear Physics (NP)

- (a) Medium Energy Nuclear Physics
- (b) Heavy Ion Nuclear Physics
- (c) Fundamental Symmetries
- (d) Nuclear Structure and Nuclear Astrophysics
- (e) Nuclear Theory
- (f) Nuclear Data and Nuclear Theory Computing
- (g) Accelerator Research and Development for Current and Future Nuclear Physics Facilities
- (h) Quantum Information Science for Experimental and Computational Nuclear Physics
- (i) Artificial Intelligence and Machine Learning for Nuclear Physics
- (j) Advanced Detector Technology Research and Development in Nuclear Physics



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Thank you!

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