

SANJANA CURTIS

@ ssanjan@ncsu.edu i sanjanacurtis.com t @sanjanacurtis m +(919) 537 1169
📍 Center for Nonlinear Studies, Room 143, Los Alamos National Laboratory, Los Alamos, NM 87545

EDUCATION

- 2015–Present **PhD in Physics**, North Carolina State University, Raleigh.
2013–2015 **Master's degree in Physics**, North Carolina State University, Raleigh.
2009–2013 **Bachelor's degree in Electrical and Electronics Engineering**, PES University, Bangalore.

EXPERIENCE

- 2019–Present | **Graduate Research Assistant, CENTER FOR NONLINEAR STUDIES, Los Alamos National Lab**
> Mentor : Dr. Jonah Miller
> Research topic : Kilonovae from black hole-neutron star disks
black hole-neutron star mergers accretion disks r-process nucleosynthesis radiation transport
- 2015–Present | **Research Assistant, DEPARTMENT OF PHYSICS, North Carolina State University**
> Advisor : Dr. Carla Fröhlich
> Research topics : Nucleosynthesis in core-collapse supernovae; Monte-carlo neutrino transport in binary neutron star mergers (in collaboration with Dr. Sherwood Richers)
core-collapse supernovae neutron star mergers nucleosynthesis monte-carlo neutrino transport
- 2013–2015 | **Teaching Assistant, DEPARTMENT OF PHYSICS, North Carolina State University**
> PY206 (Physics lab for Engineers)
> PY452 (Senior lab for Physics majors)
mechanics laboratory advanced physics laboratory

AWARDS AND HONORS

- 2019 **Outstanding Graduate Research Assistant**, Department of Physics, NC State University
2018 **Murarka Graduate Student Award**, Department of Physics, NC State University
2018 **Best Poster**, 15th International Symposium on Nuclei in the Cosmos (NIC XV)
2009–2013 **Eight Distinction Awards (one per semester)**, PES Institute of Technology

RESEARCH GRANTS

- 2019 Co-PI on proposal selected for funding by the CSES Rapid Response Program
Funding Organization : Center for Space and Earth Science, Los Alamos National Lab
Title : Blue Kilonova from Black Hole-Neutron Star Disks
Authors : J. Miller, J. Dolence and S. Curtis

INVITED TALKS AND SEMINARS

- 2019 **Invited talk**, Microphysics In Computational Relativistic Astrophysics (MICRA), Jena, Germany
Title : Nucleosynthesis in core-collapse supernovae
- 2019 **Seminar**, University of Minnesota, Twin Cities, Minneapolis, USA
Title : Nucleosynthesis in core-collapse supernovae
- 2019 **Seminar**, Theoretisch-Physikalisches Institut, Jena, Germany
Title : Neutrino-matter interactions in neutron star mergers
- 2019 **Seminar**, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), Potsdam, Germany
Title : Neutrinos and nucleosynthesis in supernovae and mergers

PUBLICATIONS

- [4] K. Ebinger, **S. Curtis**, S. Ghosh et al. ; PUSHing core-collapse supernovae to explosions in spherical symmetry IV : explodability, remnant properties and nucleosynthesis yields of low metallicity stars. ApJ, 888, 91 (2019)
- [3] C. Fröhlich, **S. Curtis**, K. Ebinger et al. ; Nucleosynthesis for SN 1987A from single-star and binary-merger progenitors. J. Phys. G, 46, 084002 (2019)
- [2] **S. Curtis**, K. Ebinger, C. Fröhlich et al. ; **PUSHing core-collapse supernovae to explosions in spherical symmetry III : nucleosynthesis yields**. ApJ, 870, 2 (2018)
- [1] K. Ebinger, **S. Curtis**, C. Fröhlich et al. ; PUSHing core-collapse supernovae to explosions in spherical symmetry II : explodability and remnant properties. ApJ, 870, 1 (2018)

CONTRIBUTED TALKS AND POSTERS

- 2019 **Contributed talk**, Fifty-One Ergs, North Carolina State University, Raleigh, USA
Title : Examining the treatment of neutrino-matter interactions in neutron star merger simulations
- 2018 **Poster presentation**, Nuclei in the Cosmos XV, L'Aquila, Italy
Title : PUSHing core-collapse supernovae to explosions in spherical symmetry : nucleosynthesis yields
- 2017 **Contributed talk**, Fifty-One Ergs, Oregon State University, Corvallis, USA
Title : PUSHing core-collapse supernovae to explosions in spherical symmetry : nucleosynthesis yields
- 2017 **Contributed talk**, APS April Meeting, Washington D.C., USA
Title : PUSHing core-collapse supernovae to explosions in spherical symmetry
- 2016 **Poster presentation**, Nuclei in the Cosmos XIV, Niigata, Japan
Title : PUSHing core-collapse supernovae to explosions in spherical symmetry : nucleosynthesis yields

CONFERENCE PROCEEDINGS

- [4] C. Fröhlich, **S. Curtis**, K. Ebinger et al. ; Nucleosynthesis in core-collapse supernovae. Nuclei in the Cosmos XV Springer Proc. Phys. vol 219 pp 99-103 (2019)
- [3] C. V. Hampton, M. Lugaro, P. Papakonstantinou, P. G. Isar, B. Nordström, N. Özkan, M. Aliotta, A. Čiprijanović, **S. Curtis** et al. ; Women scientists who made nuclear astrophysics. Nuclei in the Cosmos XV Springer Proc. Phys. vol 219 pp 367-372 (2019)
- [2] **S. Sinha**, C. Fröhlich, K. Ebinger et al. ; **PUSHing core-collapse supernovae to explosions in spherical symmetry : nucleosynthesis yields**. JPS Conf. Proc. 14, 020608 (2017)
- [1] K. Ebinger, **S. Sinha**, C. Fröhlich et al. ; Explosion dynamics of parametrized spherically symmetric core-collapse supernova simulations. JPS Conf. Proc. 14, 020611 (2017)

SCHOOLS AND WORKSHOPS

- 2019 **Advancing Theoretical Astrophysics**, University of Amsterdam, Amsterdam, Netherlands
- 2018 **9th International High Performance Computing Summer School**, Ostrava, Czech Republic
- 2018 **FRIB TA - Neutron Star Merger Summer School**, Michigan State University, Lansing, USA
- 2017 **North American Einstein Toolkit School and Workshop at NCSA**, NCSA, Urbana, USA
- 2016 **Nuclei in the Cosmos XIV School**, Niigata University, Niigata, Japan

LEADERSHIP AND SERVICE

- 2018 - Present** **Author, Astrobites** (astrobites.org/author/scurtis/)
Writing summaries of latest research papers for the graduate student run website
- Summer 2019 **Machine Learning Reading Group, NC State University**
Started an unofficial reading group for physics faculty and students
- 2017-2018 **President, Women in Physics, NC State University**
Established the official Women in Physics student organization at NC State
- Fall 2017 **Student Mentor, College Mentors for Kids at NCSU, NC State University**
Mentored elementary school students through weekly activities on the college campus
- 2016-2017 **Vice-President, Graduate Physics Student Association, NC State University**
Served on executive board and organized several activities for fellow graduate students
- 2016-2017 **Astrophysics Open House,, NC State University**
Part of organizing team for yearly events at the Reedy Creek Observatory

FUNDING

- 2019 **Participant Support Award, MICRA 2019**
Supported by JINA-CEE and Michael Stifel Center Jena
- 2017 **All Expense Paid, 9th International HPC Summer School**
Supported by SciNet, RIKEN, XSEDE and PRACE
- 2017 **Travel Award, North American Einstein Toolkit School and Workshop at NCSA**
Supported by NSF grant 1550551 to Louisiana State University
- 2016 **Travel Award, Nuclei in the Cosmos XIV School**

PROJECTS

- 2015 **Galactic Chemical Evolution Models, NC State University**
Numerical models of four Milky Way dwarf spheroidal galaxies
- 2013 **Underwater Remotely Operated Vehicle, PES Institute of Technology**
Built in collaboration with two other electrical engineering undergraduates
- 2012 **Maze-solver Robot, PES Institute of Technology**
An arduino based robot capable of mapping and solving a square maze

REFERENCES

Carla Fröhlich

University Faculty Scholar, NORTH CAROLINA STATE UNIVERSITY

@ cfrohli@ncsu.edu

Friedrich-Karl Thielemann

Professor Emeritus of Theoretical Physics, UNIVERSITY OF BASEL

@ f-k.thielemann@unibas.ch

Sherwood Richers

N3AS Postdoctoral Fellow, UC BERKELEY

@ srichers@berkeley.edu