Curriculum Vitae

Rahul Jain
Dual Ph.D. Candidate
Dept. of Physics and Astronomy
Dept. of Computational Mathematics, Science and Engineering (CMSE)
Michigan State University

Graduate Research Assistant
Facility for Rare Isotope Beams (FRIB)
640 S Shaw Lane, Office 2010
East Lansing, MI 48823
Email: jain@frib.msu.edu
LinkedIn: https://www.linkedin.com/in/rahuljain96/

Employment

Graduate Research Assistant — Summer 2019 - Present
Facility for Rare Isotope Beams
Nuclear Astrophysics Group - Prof. Hendrik Schatz

Teaching Assistant — Fall 2018 - Spring 2019
Dept. of Physics and Astronomy, Michigan State University
PHY-252 (Intro. Physics Lab. for non-physics majors) — Fall 2018
PHY-431 (Advanced Undergraduate Optics Lab.) — Spring 2019

Research Experience

Visiting International Research Student — January 2018 - July 2018
TRIUMF, University of British Columbia, Vancouver
Advisor: Prof. Reiner Krüecken

Jagadish Endowment Scholar — May 2017 - July 2017
Dept. of Nuclear Physics, Australian National University, Canberra
Advisor(s): Prof. Mahananda Dasgupta and Prof. David Hinde

CERN Summer Student — May 2016 - July 2016
ATLAS Collaboration, CERN, Geneva
Advisor: Prof. Melissa Franklin

Summer Research Fellowship Program — May 2015 - July 2015
Indian Academy of Sciences, Anna University, Chennai
Advisor: Prof. K Murali

Education

Michigan State University, East Lansing, MI — August 2018 - Present
Dual Ph.D. in Physics and CMSE
Focus: Experimental Nuclear Astrophysics and Bayesian Inference
Tentative Thesis: Heating and Cooling in Accreting Neutron Star Crusts
Advisor: Prof. Hendrik Schatz
Co-advisor: Prof. Witold Nazarewicz

Michigan State University, East Lansing, MI — August 2018 - July 2021
M.S. in Physics
Advisor: Prof. Hendrik Schatz

Indian Institute of Technology Roorkee, Roorkee, India — July 2013 - July 2018
Integrated M.Sc. in Physics with minor in Computer Science and Engineering
CGPA: 8.51/10 ($\equiv$ 90%)
Passed with Distinction and Gold Medalist
Advisor: Prof. Moumita Maiti

Awards & Fellowships

[7] **Konrad Gelbke Award (Honorable Mention)** — April 2022
Dept. of Physics and Astronomy, Michigan State University

[6] **AGEP Student Success Conference 2021** — November 2021
1^{st} Place for Oral Presentation titled *"X-rays from the Space"*
The Graduate School, Michigan State University

[5] **IITR ENCORE Award** — November 2016
Indian Institute of Technology Roorkee

[4] **Annual Excellence Award** — April 2015, 2016, 2017
IIT Roorkee Heritage Foundation

[3] **Kishor Vaigyanik Protsahan Yojana - Young Scientist Fellowship** — December 2014
Indian Institute of Sciences, Bangalore

[2] **INSPIRE Scholarship for Higher Education** — July 2013
Department of Science and Technology, Govt. of India

[1] **National Talent Search Scholarship** — September 2009
National Council of Educational Research and Training, India

Publications

[**7**] "Evidence of a Near-Threshold Resonance in ^{11}B Relevant to the β-Delayed Proton Emission of ^{11}B*e*"
Y. Ayyad, W. Mittig, T. Tang, B. Olaizola, G. Potel, N. Rijal, N. Watwood, H. Alvarez-Pol, D. Bazin, M. Caamaño, J. Chen, M. Cortesi, B. Fernández-Domínguez, S. Giraud, P. Gueye, S. Heinitz, **R. Jain**, B. P. Kay, E. A. Maugeri, B. Monteagudo, F. Ndayisabye, S. N. Paneru, J. Pereira, E. Rubino, C. Santamaria, D. Schumann, J. Surbrook, L. Wagner, J. C. Zamora, V. Zelevinsky
Physical Review Letters **129**, 012501 (2022)

[**6**] "^{57}Z*n* β-delayed proton emission establishes the ^{56}N*i* rp-process waiting point bypass"
M. Saxena, W. -J Ong, Z. Meisel, D.E.M. Hoff, N. Smirnova, P.C. Bender, S.P. Burcher, M.P. Carpenter, J.J. Carroll, A. Chester, C.J. Chiara, R. Conaway, P.A. Copp, B.P. Crider, J. Derkin, A. Estradé, G. Hamad, J.T. Harke, **R. Jain**, H. Jayatissa, S.N. Liddick, B. Longfellow, M. Mogannam, F. Montes, N. Nepal, T.H. Ogunbeku, A.L. Richard, H. Schatz, D. Soltesz, S.K. Subedi, I. Sultana, A.S. Tamashiro, V. Tripathi, Y. Xiao, R. Zink
Physics Letters B **829**, 137059 (2022)

[**5**] "Online Bayesian optimization for a recoil mass separator"
S. A. Miskovich, F. Montes, G. P. A. Berg, J. Blackmon, K. A. Chipps, M. Couder, C. M. Deibel, K. Hermansen, A. A. Hood, **R. Jain**, T. Ruland, H. Schatz, M. S. Smith, P. Tsintari, L. Wagner
Physical Review Accelerators and Beams **25**, 044601 (2022)

[**4**] "SECAR: A recoil separator for nuclear astrophysics"
Pelagia Tsintari, Ruchi Garg, Georg Berg, Jeff Blackmon, Kelly Chipps, Manoel Couder, Catherine Deibel, Nikolaos Dimitrakopoulos, Uwe Greife, Ashley Hood, **Rahul Jain**, Caleb Marshall, Zach Meisel, Sara Miskovich, Fernando Montes, Georgios Perdikakis, Thomas Ruland, Hendrik Schatz, Kiana Setoodehnia, Michael Smith, Louis Wagner
EPJ Web of Conferences **260**, 11044 (2022)

[**3**] "The impact of neutron transfer on heating and cooling of accreted neutron star crusts"
H. Schatz, Z. Meisel, E.F. Brown, S.S. Gupta, G.W. Hitt, W.R. Hix, **R. Jain**, R. Lau, P. Möller, W.-J. Ong, P.S. Shternin, Y. Xu, M. Wiescher
The Astrophysical Journal **925**, 205 (2022)

[**2**] "Precision mass measurement of lightweight self-conjugate nucleus ^{80}Z*r*"
A. Hamaker, E. Leistenschneider, **R. Jain**, G. Bollen, S. A. Giuliani, K. Lund, W. Nazarewicz, L. Neufcourt C. R. Nicoloff, D. Puentes, R. Ringle, C. S. Sumithrarachchi, I. T. Yandow
Nature Physics **17**, 1408-1412 (2021)

[**1**] "First direct measurement of ^{59}C*u*$(p,\alpha)^{56}$N*i*: A step towards constraining the Ni-Cu cycle in the cosmos"
J. S. Randhawa, R. Kanungo, J. Refsgaard, P. Mohr, T. Ahn, M. Alcorta, C. Andreoiu, S. S. Bhattacharjee, B. Davids, G. Christian, A.A. Chen, R. Coleman, P. Garrett, G.F. Grinyer, E. Gyabeng Fuakye, G. Hackman, **R. Jain**, K. Kapoor, R. Krücken, A. Laffoley, A. Lennarz, J. Liang, Z. Meisel, N. Nikhil, A. Psaltis, A. Radich, M. Rocchini, N. Saei, M. Saxena, M. Singh, C. Svensson, P. Subramaniam, A. Talebitaher, S. upadhyayula, C. Waterfield, J. Williams, M. Willaims
Physical Review C Letters **104**, L042801 (2021)