Saikat Das

Personal Information

- Date of Birth: 05 January 1994
- Citizenship: India
- ORCID: 0000-0001-5796-225X
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Contact Information

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Research Interests

- Theoretical Astroparticle Physics (Neutrinos, Gamma Rays, Cosmic Rays, and Dark Matter)
- Multi-Messenger and High Energy Astrophysics (Blazars, Gamma-ray Bursts, Gravitational waves)

Appointments

- **Postdoctoral Researcher** Oct 2021 - Sep 2023
  Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan

Education

- **Ph.D. (Astrophysics)**, Raman Research Institute, Bangalore, India Aug 2016 - Jul 2021
  Thesis Title: The Origin and Propagation of Ultra-high Energy Cosmic Rays
  Advisor: Prof. Nayantara Gupta
- **M.Sc. (Physics)**, Indian Institute of Technology (IIT) - Kharagpur, India Jul 2014 - Jun 2016
  Thesis Title: Milky Way Globular Cluster Dynamics
  Advisor: Prof. Nirupam Roy
- **B.Sc. (Physics Hons.)**, Jadavpur University, Kolkata, India Aug 2011 - Jun 2014

Prizes, Awards, Scholarships

- Best Poster Award, ISAPP 2019, Pierre Auger Observatory, Argentina 2019
- Rank - 1 in PhD course-work, IISc - Bangalore & RRI - Bangalore 2017
- JRF Rank - 75, CSIR-UGC National Eligibility Test, Govt of India 2016
- All India Rank - 33 in GATE Physics, Organizer: IISc, Bangalore 2016
- Rank - 4 in M.Sc., Department of Physics, IIT - Kharagpur 2016
- All India Rank - 139 in IIT - JAM Physics, Organizer: IIT - Kanpur 2014
- Rank - 3 in B.Sc. (Physics Hons.), Jadavpur University 2014
- DST Inspire Scholarship (5 years period), Government of India 2011

Schools, Conferences, and Workshops

- *Talk and Poster* International Cosmic Ray Conference (ICRC), DESY, Germany 2021
- *Participation* Global Cosmic Ray Observatory (GCOS) workshop **(Online)** 2021
- *Poster* Fermi Symposium, University of Johannesburg, South Africa **(Online)** 2021
- *Talk* RATOP 2021, Center for Theoretical Physics, Warsaw, Poland 2021
- *Talk and Poster* ISAPP School on Cosmic Rays, Pierre Auger Observatory, Argentina 2019
- *Participation* IIT Bombay - ICTP workshop on neutrino physics, India 2018

Professional References

- **Prof. Nayantara Gupta**, Astronomy & Astrophysics Group, Raman Research Institute, India
  E-mail: nayan@rri.res.in
- **Prof. Soebur Razzaque**, Center for Astro-particle Physics, University of Johannesburg, South Africa
  E-mail: srazzaque@uj.ac.za
- **Prof. Kohta Murase**, Department of Physics, Pennsylvania State University, United States
  E-mail: murase@psu.edu

Refereed Journal Publications

[1] *Ultrahigh energy cosmic rays and neutrinos from light nuclei composition*
Saikat Das, Soebur Razzaque, and Nayantara Gupta
Physical Review D **99**, 083015 (2019) [arXiv:1809.05321]

[2] *Ultrahigh-energy Cosmic-Ray Interactions as the Origin of Very High-energy γ-Rays from BL Lacs*
Saikat Das, Nayantara Gupta, and Soebur Razzaque
The Astrophysical Journal **889**, 149 (2020) [arXiv:1911.06011]

[3] *Milky Way globular cluster dynamics: are they preferentially co-rotating?*
Saikat Das and Nirupam Roy
Res. Astron. Astrophys. **20**, 130 (2020) [arXiv:2003.12763]

[4] *Modeling the spectrum and composition of UHECRs with two populations of extragalactic sources*
Saikat Das, Soebur Razzaque, and Nayantara Gupta
The European Physical Journal C **81**, 59 (2021) [arXiv:2004.07621]

[5] *PeV-EeV neutrinos from gamma-ray blazars due to ultrahigh-energy cosmic-ray propagation*
Saikat Das, Nayantara Gupta, and Soebur Razzaque
The Astrophysical Journal **900**, 100 (2021) [arXiv:2012.13877]

[6] *Cosmogenic gamma-ray and neutrino fluxes from blazars associated with IceCube events*
Saikat Das, Soebur Razzaque, and Nayantara Gupta
Astronomy and Astrophysics **658**, L6 (2022) [arXiv:2108.12120]

[7] *Multi-messenger constraints on the timescale of super-heavy dark matter decay*
Saikat Das, Kohta Murase, Toshihiro Fuji, and Nagisa Hiroshima
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