Dr. Mariyah Siddiqah

Curriculum Vitae

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Research

- High Energy (Nuclear) Physics, Particle Physics.
- Quantum chromodynamics (QCD) at high energy,
- TMD PDFs, Small-x evolutions, Gluon saturation, Color Glass Condensate (CGC), Azimuthal asymmetry in hadron productions, Electron-Ion-Collider (EIC) Phenomenology.

Appointments

Assistant Professor (April 2025 - till date)
Department of Physics,
University of Kashmir,
Kupwara Campus.

SERB National Post Doctoral Fellow (Jan 2023- Jan 2025)
Department of Physics,
University of Kashmir.

Lecturer (April 2022-Sep 2022)
Jammu & Kashmir Institute of Mathematical Sciences (JKIMS),
Srinagar.

Post Doctoral Fellow (Nov 2019 - March 2022)
Department of Physics,
IIT Bombay, India.

Teaching Experience

Lecturer

- *JK Institute of Mathematical Sciences*

April 2022-Sep 2022

Delivered lectures for undergraduate Quantum Mechanics and Solid State Physics courses.

Coordinated lab sessions, guiding students through experimental procedures and safety protocols.

Teaching Assistant

- *IIT Bombay, Mumbai, India*

Conducted weekly tutorial sessions for

Mathematical Physics-II for the first-year M. Sc. students during the Spring semester of 2019-2020.

Graded assignments and exams, ensuring timely and constructive feedback to students

Education

- **Ph.D** in Physics (2016 - 2019).
  Department of Physics, Aligarh Muslim University, Aligarh, India.
- **M.Phil** in Physics (2014 - 2015),
  Department of Physics, Aligarh Muslim University, Aligarh, India.
- **M.Sc** in Physics (2011-2013),
  Department of Physics, University of Kashmir, Kashmir.
- **B.Sc** (2008-2011),
  Govt. Boys Degree College, University of Kashmir, Kashmir.

Publications

Journal Articles

- *TMD evolution effect on* $\cos 2\phi$ *azimuthal asymmetry in a back-to-back production of* J/ψ *and jet at the EIC*,
  Raj Kishore and Asmita Mukherjee and Amol Pawar and Sangem Rajesh and **Mariyah Siddiqah**
  Physical Review D 111(2025), 014003 (*arXiv:*2203.13516*)*

- *cos* $2\phi_t$ *azimuthal asymmetry in back-to-back* J/ψ*-jet production in e* $p \to e$ J/ψ $JetX$ *at the EIC ,*
  Raj Kishore, Asmita Mukherjee, Amol Pawar, **Mariyah Siddiqah**
  Physical Review D 106(2022), 034009 *(arXiv:*2203.13516*)*

- *Cos* $2\phi_h$ *asymmetry in* J/ψ *production in unpolarized ep collision,*
  Raj Kishore, Asmita Mukherjee, **Mariyah Siddiqah**,
  Physical Review D 104(2021), 094015. *(arXiv:*2103.09070*)*

- *Small-x evolution of* 2*n-tuple Wilson line correlator revisited: The non-singular kernels* , *Khatiza Banu*, **Mariyah Siddiqah**, *and Raktim Abir*
  Physical Review D 99 **(**2019**),** 094017. *(arXiv:*1901.11531 *)*

- *Unintegrated dipole gluon distribution at small transverse momentum,*
  Mariyah Siddiqah, *Nahid Vasim, Kadiza Banu, Trambak Bhattacharyya, and Raktim Abir,*
  Physical Review D 97 **(**2018**),** 054009. *(arXiv:*1801.01637 *)*

- *Solution of the linearized Balitsky-Kovchegov equation,*
  Mariyah Siddiqah *and Raktim Abir,*
  Physical Review D 95 **(**2017**),** 074035. *(arXiv:*1702.03640 *)*

Conference Proceedings

- Azimuthal Asymmetry in J/ψ Electroproduction as a Probe to Linearly Polarized Gluon Distribution at Electron–Ion Collider,
  Raj Kishore, Asmita Mukherjee and **Mariyah Siddiqah**
  Published in: JPS Conf.Proc. 37 (2022) 020129
- *Dynamics of QCD matter — current status*,
  Amaresh Jaiswal, Najmul Haque, Aman Abhishek, Raktim Abir, Aritra Bandyopadhyay, **Mariyah Siddiqah** et.al
  Published in: Int.J.Mod.Phys.E 30 (2021) 02, 2130001
- *Variational energy for* θ^+ - ^2H *bound state*,
  Mohammad Shoeb, TabassumNaz and **Mariyah Siddiqah**,
  Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 60 (2015).
- *Analysis of proton -* ^9Be *scattering observables using most accurate spin orbit potential*,
  Mariyah Siddiqah , Syed Rafi, Manjari Sharma and W. Haider ,
  Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 61 (2016).
- *Isospin dependence of the Microscopic Optical potential for Neutron rich isotopes of Be*,
  Mariyah Siddiqah, Syed Rafi, Manjari Sharma and W. Haider,
  Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 61 (2016).
- *Solution of the Balitsky-Kovchegov equation in its linearised form*,
  Mariyah Siddiqah and Raktim Abir,
  Proceedings of the DAE-BRNS Symp. Nucl.Phys. 62 (2017).

Awards & Fellowships

- National Postdoctoral Fellowship (NPDF), 2023.
- Institute Postdoctoral Fellowship, IIT Bombay, 2019.
- Received Best Poster Award and was offered to present a promotional flash talk at the plenary session in

  XXIII DAE-BRNS high energy physics Symposium, December10-12, 2018, Indian Institute of Technology Madras, Chennai, India.

Oral/Poster presentations

- **SCPP Workshop on Probing the Nucleon in Three Dimensions at the Electron-Ion Collider,**
  March 4 – 5, 2024; IIT Bombay,India.
  Oral presentation:"Effect of TMD Evolution on Asymmetries."
- **XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects,**
  April 12 – 16, 2021; Stony Brook, NY.
  Oral presentation: "Azimuthal asymmetries in J/ψ leptoproduction within the color octet model at the Electron-Ion collider."
- **Dynamics of QCD matter**,
  August 15-17, 2019; NISER, Jatni, Odisha, India.
  Oral presentation: "Black-Disc limit of unintegrated dipole gluon distribution at small transverse momentum".
- 3**rd Heavy Flavour Meet-**2019,
  March 18-20, 2019; Indian Institute of Technology Indore, India.
  Oral presentation: "New analytical solution of Balitsky-Kovchegov equation in the unitarity limit".
- **XXIII DAE-BRNS Symposium on High Energy Physics**,
  December10-12, 2018; Indian Institute of Technology Madras, Chennai, India.
  Poster presentation: "Unintegrated Dipole Gluon Distribution at small Transverse momentum".
  Received best poster award and presented a promotional flash talk at the plenary session
- 62**nd DAE-BRNS Symposium on Nuclear Physics.**
  December 20 - 24, 2017; Thapar University, Punjab, India.
  Poster presentation titled "Solution of the Balitsky-Kovchegov equation in its linearised form"

Workshops/Schools

- **International School and Workshop on Probing Hadron Structure at the Electron-Ion Collider,**
  29 January-9 February 2024; ICTS, Bangalore, India.
- **International Workshop on Frontiers in Electroweak Interactions of Leptons and Hadrons**,
  November 02-06, 2016; Aligarh Muslim University, Aligarh, India.

- **CNT Lectures on Selected Topics in Nuclear Theory**,
  February 16-25, 2016; Veriable Energy Cyclotron Centre, Kolkata.
- **Workshop on High Performance Computing**,
  March 11-13, 2015; Inter-University Accelerator Centre, New Delhi, India.
- **SERC School on Modern Theories Of Nuclear Structure**,
  February 23-March 5, 2015; Indian Institute of Technology Roorkee, India.