Manjunath Bhat

Education

2018–present **PhD**, *Adam Mickiewicz University*, Poznan, Poland.

2010–2012 **Masters of Science**, *Manipal University* , Manipal, Karnataka, India.

2007–2010 **Bachelor of Science**, *M.G.M College,Mangalore University*, Udupi,Karnataka, India.

Masters Thesis

Title *Correlation between fission barrier heights and spontaneous fission half - lives of super heavy elements*

Supervisors Dr. Mohini Gupta & Professor Y. K. Gambhir

Description This thesis explored the Spontaneous fission half - lives of heavy elements. A formula with four parameters for spontaneous fission half - lives is re-derived using Viola - Seaborg formula. The calculated SF half - lives are in good agreement with the corresponding experimental half - lives. The spontaneous fission half - lives of the isotopes of Z=104−110 (Rf − Ds) are predicted and are consistent with the available experimental data. The data obtained is analyzed using data analysis techniques

Work Experience

2015–2017 **Junior Research Fellow**, *St Philomena College* , Puttur, Karnataka.
I worked in a DAE-BRNS project titled "The study of Mass spectra and decay properties of heavy mesons with certain potentials in constituent quark model" as a junior research fellow under the supervision of Dr. A. P. Monteiro. We worked on constructing a theoretical model of quarks and calculted masses and decay widths of heavy mesons. We did statsical data analysis of available experimental data and did χ^2-fit to obtain model parameters.

2014–2015 **Lecturer**, S. R. Pre-University College, Hebri, Karnataka.

2013–2014 **Lecturer in Physics**, Bhandarkars College, Kundapur, Karnataka.

Awards

2015 Best poster award in 60th DAE Symposium on Nuclear Physics, India

2015 Junior Research Fellowship

Skills

- Quantum Physics
- Quantum Field Theory
- Particle Physics
- Lattice QCD

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- Data analysis
- Quantitative skills
- Data Visualization
- Statistics
- Analytical skills

Computer skills

Basic	R,HTML
Intermediate	Matlab
Advanced	SQL, MS Excel,C, C++,PYTHON,LaTeX, Linux,FORTRAN, Mathematica

List of Publications

1. Continuum limit of parton distribution functions from the pseudo-distribution approach on the lattice, Manjunath Bhat, Wojciech Chomicki, Krzysztof Cichy, Martha Constantinou, Jeremy R. Green and Aurora Scapellato,Phys. Rev. D 106, 054504(2022), arxiv:2205.07585[hep-lat].
2. Flavor nonsinglet parton distribution functions from lattice QCD at physical quark masses via the pseudodistribution approach, Manjunath Bhat, Krzysztof Cichy, Martha Constantinou and Aurora Scapellato, Phys. Rev. D 103, 034510(2021), arXiv:2005.02102[hep-lat].
3. Mass spectra and decays of ground and orbitally excited $c\bar{b}$ states in non relativistic quark model, Antony Prakash Monteiro, Manjunath Bhat and K. B. Vijaya Kumar, arXiv:1607.07594v2 [hep-ph], Int. J. Mod. Phys. A **32**, 1750021(2017) DOI: 10.1142/S0217751X1750021X.
4. $c\bar{b}$ spectrum and decay properties with coupled channel effects, Antony Prakash Monteiro, Manjunath Bhat and K. B. Vijaya Kumar, Phys. Rev. D 95, 054016(2017) arXiv:1608.05782v2 [hep-ph], DOI: 10.1103/PhysRevD.95.054016.
5. Effects of coupled channels on $c\bar{b}$ mass and decays in NRQM with OGEP, Manjunath Bhat, Antony Prakash Monteiro and K. B. Vijaya Kumar, International Journal of Modern Physics E **26**, (2017)1750037, DOI:10.1142/S0218301317500379

Publications and talks in conferences

1. Continuum limit study of Pseudo parton distribution functions, The International Symposium on Lattice Field Theory (LATTICE-2022),08-13 August 2022, University of Bonn, Germany.
2. Pseudo parton distribution functions, Asia-Pacific Symposium for Lattice Field Theory (APLAT 2020), 04-07 August 2020, Online hosted by KEK Theory Center and sponsored by Asian Nuclear Physics Association (ANPhA).
3. Analytical solutions of the Schroedinger equation with the Woods-Saxon potential for l=0 states, Antony Prakash Monteiro, Manjunath Bhat, Proceedings of the DAE International Symp. on Nucl. Phys. 60 , (2015) (December 07-11, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam-515134, AP, India)
4. Numerical solution of Schroedinger equation using matrix Numerov method with Woods - Saxon potential, Manjunath Bhat, Antony Prakash Monteiro, Proceedings of the DAE International Symp. on Nucl. Phys. 60 , (2015) (December 07-11, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam-515134, AP, India)
5. Mass spectra of B_c meson using Woods-Saxon potential, Antony Prakash Monteiro, Manjunath Bhat, Proceedings of the DAE International Symp. on Nucl. Phys. 60 , (2015) (December 07-11, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam-515134, AP, India)

6. Variation of Ground state B_c and B_c^* meson masses for various n values, Antony Prakash Monteiro, Manjunath Bhat, K. B. Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 60 , (2015) (December 07-11, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam-515134, AP, India)
7. Masses of P and D wave $c\bar{b}$ states in relativistic model, Antony Prakash Monteiro,Manjunath Bhat,K.B Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
8. Mass spectra of orbitally excited $c\bar{b}$ states in a non-relativistic quark model, Antony Prakash Monteiro,Manjunath Bhat,K.B Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
9. Radiative decays of $c\bar{b}$ states in a non-relativistic quark model, Antony Prakash Monteiro,Manjunath Bhat,K.B Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
10. Radiative decays of $c\bar{b}$ states in a relativistic quark model, Manjunath Bhat,Antony Prakash Monteiro,K.B Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
11. Weak decays and life time of B_c meson, Manjunath Bhat, Antony Prakash Monteiro, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
12. S-wave Masses of B Meson in a Non relativistic Quark Model with Hulthen Potential, Praveen P D'Souza, Antony Prakash Monteiro, Manjunath Bhat, K. B Vijayakumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
13. Coupled channel effects in $c\bar{b}$ spectra, Manjunath Bhat, Antony Prakash Monteiro, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
14. Ground State Charmed Meson Spectra in a Non Relativistic Quark Model, Antony Prakash Monteiro,Manjunath Bhat,Praveen P D'Souza,K. B. Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
15. Annihilation decays of bottomonium, Antony Prakash Monteiro, Manjunath Bhat, Praveen P D'Souza,K.B Vijaya Kumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)
16. Realistic Results of Low-Lying Charmonium Masses Using Instanton Potential, Praveen P D'Souza,Antony Prakash Monteiro,Manjunath Bhat,K. B Vijayakumar, Proceedings of the DAE International Symp. on Nucl. Phys. 61 , (2016) (December 05-09, Saha Institute of Nuclear Physics, Kolkata)

Schools and Conferences attended

1. The International Symposium on Lattice Field Theory (LATTICE-2022),08-13 August 2022, University of Bonn, Germany.
2. Asia-Pacific Symposium for Lattice Field Theory (APLAT 2020), 04-07 August 2020, Online hosted by KEK Theory Center and sponsored by Asian Nuclear Physics Association (ANPhA).
3. SERC Preparatory School on Theoretical High Energy Physics, September-October 2016,IIT Gandhinagar, Gujarat, India.
4. 61st DAE Symposium on Nuclear Physics, 05-09 December-2016 , Saha Institute of Nuclear

Physics, Kolkata,India.

5. 60th DAE Symposium on Nuclear Physics, 07-11 December-2015, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam-515134, AP, India.
6. 57th DAE Symposium on Nuclear Physics, 3-7 December 2012, University of Delhi, Delhi, India.
7. 56th DAE Symposium on Nuclear Physics, 26-30 December 2011, Andhra University, Visakhapatnam, AP, India.

Languages

English **Fluent**

Hindi **Fluent**

Kannada **Mother tongue**