

*Tejaswini Dalvi*



***Academic Details:***

- Bachelor Of Science (Physics)  
2001-2004: University of Pune
- Master Of Science (Physics)  
2004-2006: University Of Pune
- PhD studies  
Nov 2006- August 2008: Institute of Theoretical physics, J.W. Goethe University, Frankfurt, Germany.  
Work Focus: Theory of High Temperature Superconductors.
- Since January 2009- Research Associate and Faculty at UM-DAE Centre for Excellence in Basic Sciences.

***Main field of Specialization: Condensed Matter Physics***

- Focus on study of strongly correlated systems. These are quantum many-body systems in which the interaction effects are strong, so that their properties cannot be described by perturbation theory from an independent particle picture. Condensed matter with strong many-body interactions is characterized by unusual, novel collective behavior, which cannot be understood by the properties of its individual constituents. These strongly correlated systems normally show a high degree of complexity resulting from the interplay of several degrees of freedom (charge, spin and angular momentum) and their coupling to the ion lattice. Investigations of the collective behaviour of interacting many-body systems on a broad phenomenological context are of prime interest.

***Specific Interests:***

- Monte Carlo Methods
- Hubbard and t-J models: exploring nature of excitations

***Special Interests: Science Communication***

- A vast gap exists between the ‘scientific community’ or the ‘science studying-doing community’ and the ‘Non-scientific community’. Bridging this gap needs a focus on proper communication (clear and simple) between these two sections so as to build up an overall rational and just approach. With this at the backdrop, working at a grass root level, clarifying basic concepts and ideas.
- Creating common platform for exchange of ideas and knowledge sharing.

***Experience:***

- Worked as tutor for diploma, bachelor and masters’ students, at the Institute of theoretical physics, J.W. Goethe University, Frankfurt.  
Subjects taught: Solid State Physics  
Quantum mechanics 1

## Quantum mechanics 2

- Taught Mathematics at High School level at Frankfurt.
- Conducted mathematics workshop at the Oberursel gymnasium (school), Frankfurt.
- Participated as a Resource person for Orientation camp for Indian National Astronomy Olympiad.
- Worked for Film and Television institute, Pune, India, as an interviewer and script writer.