

VIPIN KERALA VARMA

Institute Address

Physics Institute
University of Bonn
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Bonn, 53115
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EDUCATION

Bachelor of Engineering, Electronics and Communication
National Institute of Technology, Karnataka GPA: 4.0/4.0 08/2002 - 05/2006
ADVISOR: Prof. Dr. G. Umesh, Dr. U. Sripathi
MAJOR PROJECT: Quantum computing and quantum information algorithms

Master of Science, Physics
BCTP, UB GPA: 1.2/1.0 (overall) 10/2008 - 12/2010
ADVISOR: Prof. Dr. Hartmut Monien
THESIS: Quasiparticle dynamics on frustrated lattices GPA: 1.0/1.0

Doctoral research, Physics
Bethe Center for Theoretical Physics (BCTP), University of Bonn (UB) 01/2011 - present
ADVISOR: Prof. Dr. Hartmut Monien

ACADEMIC/PROFESSIONAL EXPERIENCE

National Institute of Technology, Karnataka (NITK) 08/2002 - 05/2006
Department of Electronics and Communication

- QUANTUM COMPUTATION ALGORITHMS: simulation of Shor's algorithm, Phase estimation, Quantum Fourier Transform, Grover's database search, 2005/2006.
- VLSI LAB: Design, lay-out of 8-bit BILBO (Built in Logic Block Observer), 2005.
- DIGITAL SIGNAL PROCESSING LAB: Implementation of Speech Recognition System, 2006.
- DIGITAL SYSTEM DESIGN LAB: Design and comparative study of various multipliers (Array, Wallace, Modified Booth-Wallace), 2005.
- INFORMATICS LAB: Assistant for "Signals and Systems" course, 2005.

Nest Cyber Campus 06 - 07/2005
SFO Technologies (Industrial Intern)

- Developed EMBEDDED SYSTEM DEVICE DRIVER for LCD module using Intel 89C51 microcontroller.

Nvidia Graphics Pvt. Ltd. 07/2006 - 06/2008
Bangalore Design Centre (Hardware ASIC design engineer)

- Employed in MEDIA AND COMMUNICATION unit; previously in HANDELD unit.
- Front-end issues, unit and system level verification, gate simulations, associated bug fixes in motherboard-chipset MCP79 used currently in virtually all of Apple's Macs.

University of Bonn
Bonn Graduate International School (BIGS) 10/2008 - 10/2009

- OPTICS LAB: "Bloch-Zener oscillations and Landau-Zener tunneling".

Physics Institute 10/2009 - present

- Tutor for ADVANCED QUANTUM THEORY WS 2009/2010.
- Supervised project “Heisenberg spin-chains and Haldane’s conjecture” for COMPUTATIONAL METHODS IN CONDENSED MATTER PHYSICS SS 2010.
- Tutor for THEORETICAL CONDENSED MATTER PHYSICS WS 2010/2011, 2011/2012.

Bonn Cologne Graduate School (BCGS) 10/2008 - present

- Member of German Excellence-Initiative.

PUBLICATIONS

- Strong coupling expansion for bosons on the kagome lattice, V. K. Varma and H. Monien, cond-mat/1103.6002 (2011) (to appear in Phys. Rev. B).

PRESENTATIONS

- “Quantum Dots” in ADVANCED TOPICS OF CONDENSED MATTER AND PHOTONICS, BIGS 06/2009.
- “Quantum Teleportation - theory and experimental realization” in UNDERSTANDING AND BUILDING A QUANTUM COMMUNICATION LINK, BCGS Intensive Week 03/2009.
- Coorganizer and presenter of Unit-3, CORRELATIONS IN CONDENSED MATTER, BCGS Weekend Seminar, Bonn 2011.

SCHOOLS

- Conceptual and Computation approaches to quantum many-body systems, BOULDER SCHOOL ON CONDENSED MATTER AND MATERIALS PHYSICS, University of Colorado, Boulder 07/2010.
- Strongly Correlated Electronic Systems - Beyond Fermi liquid, LES HOUCHES SPRING SCHOOL, France 04/2011

MEMBERSHIPS

BCGS, Student member, October 2008 - present
IEEE, Student member, 2005 - 2006
Star Gazing Club NITK, 2004 - 2006
Problem formulation committee, ENGINEER All-India Tech Fest, 2005-2006

AWARDS/HONORS

BIGS scholarship, October 2008 - October 2009
BCGS scholar stipend, October 2008 - present
Second Award, Musical Fountain Controller Design, ENGINEER All-India Tech Fest 2005
Meritorious award in Science (Top 0.1%), Central Board of Secondary Education, 2001
Merit certificate, National Mathematics Olympiad, 1999, 2000
High Distinction (99 percentile), International Assessment for Schools, Science Exam by University of New South Wales, 1999

INTERESTS

Poetry, pencil sketching