Sunethra Ramanan

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Citizenship: India.

Education

- The Ohio State University, Columbus Ohio - 43210
  - Postdoctoral Researcher (March 2007 - present)
  - Graduate School in Physics (June 2000 - March 2007)
  - PhD in Physics: March 2007
  - Dissertation title: *Renormalization Group Approach to the Nucleon-Nucleon Interaction*, Advisor: Prof. Richard J. Furnstahl
- Tata Institute of Fundamental Research, Mumbai, India
  - Graduate School in Physics: August 1999 - May 2000
- Indian Institute of Technology (I.I.T.- M), Chennai, India
  - Master of Science in Physics: May 1999
  - Dissertation Title: *Invariant Density of Chaotic Maps*, Thesis Advisor: Prof. V. Balakrishnan
- Stella Maris College, Chennai, India
  - Bachelor of Science in Physics: May 1997

Research projects

- 2003 - present: *Renormalization Group Approach to the Nucleon-Nucleon Interaction* Advisor: Prof. Richard J. Furnstahl, The Ohio State University, Columbus, OH.

- 2002- 2003: *Quark-Hadron Duality*
  Advisor: Prof. Sabine Jeschonnek and Prof. Richard J. Furnstahl, The Ohio State University, Columbus, OH.

- 2001 Summer: Summer Research: *Superconductivity - Reading Project*
  Advisor: Prof. David Stroud, The Ohio State University, Columbus, OH.

- 2000 Summer: Summer Research: *Nonlinear Dynamics of Josephson Junctions*
  Advisor: Prof. David Stroud, The Ohio State University, Columbus, OH.

- 1998 Summer: Summer Research (Visiting Student Research Program - V.S.R.P.): *Critical Phenomena and the Renormalization Group Theory*
  Advisor: Prof. Mohit Randeria, Tata Institute of Fundamental Research, Mumbai, India.

Talks and Meetings

- July 2006: Nuclear Structure 06: *Weinberg Eigenvalue Analysis of the Renormalization Group Based Effective Potential (free space and in-medium)*, Oak-Ridge National Laboratory, Oak-Ridge, TN.
  - Presented recent work on Weinberg Eigenvalue analysis both in free space and in-medium (poster presentation)

- July 2006: GORDON Conference, Tilton, NH
  - Presented poster at the 2006 Gordon Conferece in Tilton, NH

- April 2006: APS/DNP06: *Weinberg Eigenvalue Analysis of the Renormalization Group Based Effective Potential*, Dallas, TX
  - Presented recent work on using Weinberg eigenvalues as a diagnostic to study the source of non-perturbative behavior of nucleon-nucleon interaction.

- October 2004: APS/DNP04: *Renormalization Group Theory Approach to Nucleon-Nucleon Interaction and Related Many-Body Application*, Chicago, IL.
  - Presented basic technique and simplification of the many-body calculations using renormalization group based effective potentials.

- August 2004: Summer Student Seminar *Renormalization Group Theory Approach to Nucleon-Nucleon Interaction*, The Ohio State University, Columbus, OH.
  - Presented initial work on applying Renormalization Group based effective potentials in many-body calculations.
- June 2004: 16^{th} Nuclear Physics Summer School (NPSS), Bar Harbor, ME.
  - Presented my work on using Renormalization Group Approach to the Nucleon-Nucleon Interaction
- April 2004: APS - Ohio Section: *Regulator Dependence of the Renormalization Group approach to the Nucleon-Nucleon Interaction*, Ohio University, Athens, OH.
  - Discussed in detail the regulator dependence of the Renormalization Group eqution s.
- June 2003: HUGS Summer School Student talks: *Renormalization Group Approach to the Nucleon-Nucleon Interaction*, Jefferson Lab, Newport News, VA.
  - Presented initial work on using Renormalization Group theory in Nucleon-Nucleon Interaction.
- October 2002: APS/DNP02:*Quark-Hadron Duality* Michigan State University, East Lansing, MI and APS - Ohio Section, The Ohio-State University, Columbus, OH.
  - Presented various average techniques to understand this duality.

Publications

- *Convergence of the Born series with low-momentum interaction.* S.K. Bogner, R.J. Furnstahl, S. Ramanan, A. Schwenk nucl-th/0602060, Nucl.Phys.A773:203-220,2006
- *Low-momentum potentials with smooth cut-offs* S.K. Bogner, R.J. Furnstahl, S. Ramanan, A. Schwenk nucl-th/0609003, Nucl. Phys.A (In Press)
- *Weinberg Eigenvalues and Pairing with Low-Momentum Potentials* S.K. Bogner, R.J. Furnstahl and S. Ramanan (in preparation)

Awards and Honors

- April 2002: Hazel Brown Teaching Award.
- July 1998: Pre-selected for PhD program in Physics at Tata Institute of Fundamental Research, Mumbai, as a part of the Visiting Student's Summer Research Program.
- July 1997: Received the college Gold medal for excellence in Academics (Physics), and Gnanam's Cup for excellence in Physics for three consecutive years of undergraduate studies, Department of Physics, Stella Maris Collge, Chennai, India.
- March 1997: Best Out-going Student of the Department of Physics, Academic Proficiency Award in physics, Proficiency in English Award, General Proficiency Award, Stella Maris College, Chennai, India.
- March 1996: Academic Proficiency and General Proficiency Award, Department of Physics, Stella Maris College, Chennai, India.
- March 1995: Academic Proficiency and General Proficiency Award, Department of Physics, Stella Maris College, Chennai, India.

Teaching Experience

- Spring Quarter 2002: Introductory Course in Mechanics - Teaching Assistant, The Ohio State University, Columbus, OH.
- Winter Quarter 2001 - Fall Quarter 2001: Electricity and Magnetism Laboratory Course - Teaching Assistant, The Ohio State University, Columbus, OH.
- Taught in a local school as a part of Social Awareness Program, Stella Maris College, Chennai, India.

Computer Skills

- Extensive experience programing in C on Linux and Windows
- Experience with C++, Mathematica, Maple.

References

- Prof. R.J. Furnstahl
  Professor of Physics,
  The Ohio State University,
  Physics Research Building,
  191 West Woodruff Avenue,
  Columbus, Ohio - 43201.
  Phone: 614-292-4830
  email: furnstahl.1@osu.edu

- Prof. Sabine Jeschonnek
  Assistant Professor of Physics,
  The Ohio State University(Lima Campus),
  4240 Campus Drive,
  310 A Science,
  Lima, Ohio - 45804.
  Phone: 419-995-8201
  email: jeschonnek.1@osu.edu

- Dr. Achim Schwenk,
  TRIUMF,
  Theory Group,
  4004 Wesbrook Mall,
  Vancouver, BC V6T 2A3,
  Canada.