

Curriculum Vitae

Prashanth Jaikumar

Faculty member, Theoretical Physics Group

The Institute of Mathematical Sciences, C.I.T Campus, Taramani, Chennai 600013 India

Phone: +91(44)2254-3261 Email: jaikumar@imsc.res.in Fax: + 91(44)2254-1586

Personal data

Date of birth: *December 23rd 1974*

Address: *2B, no.3, 6th cross street, CIT colony*
(India) *Mylapore, Chennai 600004*

Address: *516 Harrison Street Apt C*
(USA) *Oak Park, Illinois 60304 USA*

Permanent Resident: *Canada*

Citizen: *India*

Education

August 1992 to August 2002

Ph.D. in Physics (2002)
Stony Brook University, New York, USA *August 1997 to August 2002*

Master of Science in Physics (1997)
Indian Institute of Technology, Delhi, India *August 1995 to July 1997*

Bachelor of Science with Honors in Physics (1995)
St. Stephens College, Delhi University, Delhi, India *August 1992 to July 1995*

Employment

August 2002 to present

Visiting Scholar, Argonne National Laboratory *May 2008 to December 2008*

Assistant Professor, Institute of Mathematical Sciences *July 2007 to present*

Post-doctoral associate, Ohio University *September 2006 to June 2007*

Post-doctoral appointee, Argonne National Laboratory *September 2004 to August 2006*

Post-doctoral researcher, McGill University *September 2002 to August 2004*

Teaching and Course Development

August 1997 to May 2008

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| High energy physics journal club (Organizer) | <i>Fall 2007, Spring 2008</i> |
| Graduate seminar (lecture series) | <i>Spring 2007</i> |
| Quantum Physics for Engineers | <i>Spring 2003</i> |
| Special topics course: Solitons and Instantons | <i>Fall 2002</i> |
| Advanced Electronics Laboratory (Junior Undergraduates) | <i>Fall 1998</i> |
| Calculus for Engineers & Pre-meds | <i>Spring 1998</i> |
| Laboratory (Classical Physics) | <i>Fall 1997</i> |

Computational experience

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| Programming languages: | <i>C, Fortran90, C++</i> |
| Numerical/Graphical software: | <i>MAPLE, GRACE, Mathematica, Gnuplot, FORM</i> |
| Distributed computing: | <i>MPI</i> |

Thesis supervision

M Sc. Thesis in Physics

Student: Tanumoy Mandal (Institute of Mathematical Sciences, Chennai)

Thesis topic: *Chiral and diquark condensates in magnetized dense quark matter*

B Sc. Physics Project

Student: Saurabh Nampalliwar (Chennai Mathematical Institute)

Topic: *Numerical aspects of collapse and fragmentation of gas clouds*

References

Professor Charles Gale

*Chair, Physics Department
McGill University
3600 University Avenue
Montreal, Quebec H3A 2T8 Canada*

Email: gale@hep.physics.mcgill.ca

Ph: +1(514)398-6483

Professor Madappa Prakash

*Department of Physics & Astronomy
Ohio University
Athens, Ohio 45701 USA*

Email: prakash@harsha.phy.ohiou.edu

Ph: +1(740)593-1716

Professor Thomas Schäfer

*Department of Physics
North Carolina State University
Raleigh, North Carolina 27695-8202*

Email: thomas_schaefer@ncsu.edu

Ph: +1(919)513-7199

Professor Craig D. Roberts

*Chief, Physics Division
Argonne National Laboratory
Argonne, Illinois 60439 USA*

Email: cdroberts@anl.gov

Ph: +1(630)252-4095

Professor Rachid Ouyed

*Department of Physics & Astronomy
University of Calgary
2500 University Drive NW
Calgary, Alberta T2N 1N4 Canada*

Email: ouyed@phas.ucalgary.ca

Ph: (403)210-8418

Professor Ismail Zahed

*Department of Physics & Astronomy
Stony Brook University
Stony Brook, New York 11794 USA*

Email: Ismail.Zahed@stonybrook.edu

Ph: +1(631)632-8129

Professor Sanjay Reddy

*Theoretical division T-16
Los Alamos National Laboratory
Los Alamos, New Mexico 87545 USA*

Email: reddy@lanl.gov

Ph: +1(505)665-0455

Invited Talks

Astrophysics of Quark Matter

Plenary Talk, DAE-symposium on high-energy physics, Benares, India (December 2008)

r-modes and critical spin frequency of compact stars

Workshop on Equation of state in Astrophysics, Argonne, Illinois USA (August 2008)

r-mode instability and critical rotation rates of compact stars

The Ohio State University, Columbus, Ohio, USA (July 2008)

Neutron stars, the Equation of State and the r-process

The University of Chicago, Chicago, Illinois, USA (June 2008)

Neutron stars: Astrophysical laboratories for nuclear and sub-nuclear physics

Argonne National Laboratory, Illinois, USA (June 2008)

r-modes in color superconducting matter

Toshali Sands, Bhubaneswar, India (February 2008)

High-density matter and neutron stars

Physical Research Laboratory, Ahmedabad, India (October 2007)

r-process nucleosynthesis from decompression of neutron star matter

North Carolina State University, North Carolina, USA (February 2007)

r-process in a low-entropy environment

JINA collaboration meeting, Michigan State University, USA (February 2007)

The Quark-Nova Scenario and r-process nucleosynthesis

CASCA Bicentennial meeting, Calgary, Canada (June 2006)

Nucleosynthesis in a low-entropy environment

Washington University at St. Louis, Missouri, USA (May 2006)

Nucleosynthesis: From quarks to stars

Institute of Mathematical Sciences, Chennai, India (January 2006)

Microphysics of QCD and Quark stars

Tata Institute of Fundamental research, Mumbai, India (January 2006)

On Quark star structure and observational signals

Workshop on High-Energy Physics Phenomenology, Institute of Physics (IOP), Bhubaneswar, Orissa, India (January 2006)

The Quark Nova as a site for the r-process

Canadian Institute for Theoretical Astrophysics (CITA), Toronto, Canada (November 2005).

Mass-radius relations for solitonic stars

McGill University, Montreal, Canada (July 2005).

Strange stars have strange surfaces

Los Alamos National Laboratory, Los Alamos, New Mexico, USA (June 2005).

The nuclear astrophysics of dense quark matter

Ohio University, Athens, Ohio, USA (April 2005).

Quarks in Neutron stars : A new paradigm in astrophysics

Colloquium, University of Calgary, Calgary, Canada (March 2005).

r-process nucleosynthesis in compact stars

McGill University, Montreal, Canada (February 2005).

The many phases of dense quark matter

Colloquium, Tata Institute of Fundamental Research, Mumbai, India (August 2004).

Color superconductivity in Neutron stars

Institute of Mathematical Sciences, Chennai, India (July 2004).

Surface photon emission from quark stars

Institute for Nuclear Theory, Seattle, Washington, USA (April 2004).

Color superconductivity in dense quark matter

Argonne National Laboratory, Argonne, Illinois (February 2004).

Photon and neutrino emission rates for bare quark stars

Ohio State University, Columbus, Ohio, USA (August 2003).

BCS versus Overhauser pairing in dense QCD

Brookhaven National Laboratory, Upton, New York, USA (January 2002).

Conference & Workshop Presentations

DAE-BRNS symposium, Benares, India

Symposium on high-energy physics

December 14-18, 2008

Workshop on Equation of state in Astrophysics, Argonne

International workshop on the equation of state of matter

August 25-29, 2008

Astrophysics of quark matter; Toshali Sands, Orissa

International meeting on quarks in astrophysics

February 14-17, 2008

Quark matter 2008; Jaipur, India

International meeting on heavy-ion physics

February 4-10, 2008

CASCA Bicentennial meeting; Calgary, Canada

International meeting of the Canadian Astronomical Society

June 1-4, 2006

Hot Quarks 2006; Sardinia, Italy

International workshop on ultra-relativistic heavy-ion collisions

May 15-20, 2006

WHEPP-9; Bhubaneswar, Orissa, India

International workshop on high-energy physics phenomenology

January 3-14, 2006

Mid-west Theory Get-Together; Argonne, Illinois, USA

Annual meeting of nuclear physicists from universities in the US mid-west.

Fall 2004,2005,2006,2008

- Division of Nuclear Physics Meeting (DNP); Chicago, Illinois, USA** Oct 27-30, 2004
Meeting of American Physical Society's Division of Nuclear Physics.
- Montreal-Rochester-Syracuse-Toronto Conference (MRST)** May 12-14 2004
Conference on high energy physics from Quarks to Cosmology; Montreal, Canada.
- Quark Matter 2004; Oakland, California, USA** January 11-17, 2004
International conference on ultra-relativistic heavy-ion collisions.
- Chiral Dynamics of Hadrons and Hadrons in a medium** June 26-28, 2003
Workshop on chiral nuclear dynamics, Valencia, Spain.
- Topics in Heavy-Ion Collisions; Montreal, Canada** May 26-28, 2003
International conference on heavy-ion collisions.
- XIIIth Nuclear Physics Summer School; Bar Harbor, Maine, USA** June 12-22, 2001
Lectures on special topics in Nuclear Physics.
- Quark Matter 2001; Stony Brook, New York, USA** January 15-20, 2001
International conference on ultra-relativistic heavy-ion collisions.

Organizational activities

- Scientific Organizing Committee Member**
Compact stars in the QCD Phase Diagram II, conference on compact stars and quark matter in Beijing, China May 20-25, 2009
- Convenor**
Neutrinos in Particle Astrophysics and Cosmology (NuPAC) Satellite meeting, "Aspects of Neutrinos" (NuGoa09) April 5-7, 2009
- Science Outreach event, outreach program in physics for college students from U. Mysore, Karnataka, India** March 24-25, 2008
- Science Day, outreach program in physics for college students in Chennai** February 2008/2009
- Local organizer**
WHEPP-10, workshop on high-energy physics and phenomenology January 2-13, 2008
- Theory Seminar co-ordinator** Fall 2005, Spring 2006
Physics division, Argonne National Laboratory
- Local support staff, XVIIIth Mid-west Theory get-together** October 7/8, 2005
Physics division, Argonne National Laboratory
- Nuclear Theory Seminar co-ordinator** Fall 2003, Spring 2004
Center for High-energy physics, McGill University
- Local support staff, Quark Matter 2001** January 15-20, 2001
Stony Brook University

Extended visits

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| TRIUMF; Vancouver, Canada (Host: A. Schwenk) | August 11-August 16, 2008 |
| University of Calgary; Calgary, Canada (Host: R. Ouyed) | July 19-August 18, 2008 |
| Argonne National Laboratory; Chicago, USA (Host: C. D. Roberts) | May-December 2008 |
| Physical Research Laboratory; Gujarat, India (Host: H. Mishra) | October 28-November 2, 2007 |
| Canadian Institute for Theoretical Astrophysics; Toronto (Hosts: R. Ouyed & K. Mori) | November 12-19, 2006 |
| Los Alamos National Laboratory; New Mexico, USA (Host: S. Reddy) | June 4-8, 2005 |
| University of Calgary; Alberta, Canada (Host: R. Ouyed) | October 15-25, 2004 |
| McMaster University; Ontario, Canada (Host: R. Bhaduri) | July 4-8, 2004 |
| Stony Brook University; New York, USA (Host: M. Prakash) | August 16-23, 2003 |
| Ohio State University; Ohio, USA (Host: A. Schwenk) | August 9-15, 2003 |

Awards and Honors

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| Peter B. Kahn fellowship <i>Conference travel award for select graduate students.</i> | May 2001 |
| Neeraj Srivastav award <i>For excellence in physics and highest GPA in the graduating class (Masters level).</i> | August 1997 |

Professional societies and responsibilities

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| Member: <i>American Physical Society</i> | 2004-present |
| Referee: <i>Physical Review C, Physical Review D, Physical Review Letters, Astronomy and Astrophysics, International Journal of Modern Physics A</i> | 2004-present |

Overview of publication record

29 Regular published articles, 322 citations

Physical Review C (4), *Physical Review D* (6), *Physical Review Letters* (2), *Physics Letters B* (2), *International Journal of Modern Physics A* (2), *Modern Physics Letters A* (1), *The Astrophysical Journal* (3), *Astronomy & Astrophysics* (2), *Journal of High Energy Physics* (2), *Nuclear Physics B* (1), *Pramana: Indian Journal of Physics* (2), *European Physics Journal C* (1), *Few-Body systems* (1).