

Atri Bhattacharya

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DATE OF BIRTH April 13, 1985

SEX Male

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PERMANENT ADDRESS Flat 3D, 76-Amarendra Sarani
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EDUCATION *Doctor of Philosophy (degree expected in 2013)*, Physics
Harish-Chandra Research Institute, Allahabad, India
Specialisation: High energy neutrino physics
Ph.D. supervisor: **Raj Gandhi**

Master of Science, Physics July, 2007
Indian Institute of Technology Bombay, Mumbai, India
GPA: 8.7(/10)

Bachelor of Science, Physics July, 2005
Jadavpur University, Kolkata, India
Aggregate marks: 72%

AWARDS Was awarded a merit based scholarship for both years at the Indian Institute of Technology Bombay during 2005–2007.

PUBLICATIONS DURING MASTERS **Quasi-viscous accretion flow – I: Equilibrium conditions and asymptotic behaviour**
Published in the **Monthly Notices of the Royal Astronomical Society**, Vol. **398**, Issue **2**, 841-852
Co-authors: Jayanta K. Bhattacharjee, Tapas K. Das, Arnab K. Ray.

MASTERS DISSERTATION **Technicolour and technifermions**
Indian Institute of Technology Bombay
Supervised by Prof. U. A. Yajnik

PUBLICATIONS DURING Ph.D. **Diffuse Ultra-High Energy Neutrino Fluxes and Physics Beyond the Standard Model**,
Published in **Phys.Lett. B690 (2010) 42-47**,
Co-authors: Sandhya Choubey, Raj Gandhi, Atsushi Watanabe.

Ultra-high neutrino fluxes as a probe for non-standard physics
 Published in **JCAP 1009 (2010) 009**
 Co-authors: Sandhya Choubey, Raj Gandhi, Atsushi Watanabe.

The Glashow resonance at IceCube: signatures, event rates and pp vs. $p\gamma$ interactions.
 Published in **JCAP 1110 (2011) 017**
 Co-authors: Raj Gandhi, Werner Rodejohann, Atsushi Watanabe.

PRE-PRINTS **Re-analysing the implications of CPT and unitarity for baryogenesis and leptogenesis**
 e-Print: arXiv:1109.1832 [hep-ph]
 Co-authors: Raj Gandhi, Satyanarayan Mukhopadhyay.

On the interpretation of IceCube cascade events in terms of the Glashow resonance
 e-Print: arXiv:1209.2422 [hep-ph]
 Co-authors: Raj Gandhi, Werner Rodejohann, Atsushi Watanabe.

READING PROJECTS

1. *Higgs physics and basic supersymmetry* under the supervision of Prof. B. Mukhopadhyaya at the Harish-Chandra Research Institute
2. *Current algebra and anomaly cancellation in the Standard Model* under the supervision of Prof. V. Ravindran at the Harish-Chandra Research Institute
3. *Leptogenesis* under the supervision of Prof. S. Choubey at the Harish-Chandra Research Institute
4. *Dark matter* as a collaborative group study, under the supervision of Prof. Raj Gandhi at the Harish-Chandra Research Institute.

INVITED TALKS

1. **Diffuse UHE neutrino flux: A pointer to non-standard physics**
Nu HoRIzons III
 Harish-Chandra research Institute, India
 February 2010
2. **The Glashow Resonance as a hint to extragalactic neutrinos**
Nu HoRIzons V
 Harish-Chandra research Institute, India
 February 2012
3. **Diffuse UHE neutrino fluxes at the IceCube and non-standard physics**
 Instituto de Física Corpuscular, Valencia
 July 2010

SEMINARS & CONFERENCES ATTENDED

Year 2010
Nu HoRIzons III
 February 8–10
Harish-Chandra Research Institute, Allahabad, India

NuFact10
 October 20–25
Tata Institute of Fundamental Research, Mumbai, India

Year 2011

Nu HoRIzons IV

February 23–25

Harish-Chandra Research Institute, Allahabad, India

NUSKY 2011

June 20–24

The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

Year 2012

Workshop on High Energy Physics Phenomenology XII

January 8–15

Mahabaleswar, India

Organised by ICTS, India

Nu HoRIzons V

February 1–3

Harish-Chandra Research Institute, Allahabad, India

**COMPUTER
SKILLS**

Languages & Software: Adept and experienced at coding in C/C++, Mathematica; familiar with coding graphical user interfaces using the GTK+ toolkit and in scripting languages Python, Perl, PHP and Javascript

Web technologies: Experience with designing websites involving HTML, CSS, PHP and Javascript

Operating Systems: Linux, Unix, DOS.

**NON-
ACADEMIC
EXPERIENCE**

I have been a contributor to the openSUSE Linux distribution for the last three years, during which I have built many RPM packages for the various versions of openSUSE and helped fix bugs in the distribution packages, especially those related to the GNOME desktop environment and several scientific packages.

For the last three years I have also created and maintained the website for the annually held neutrino conference, *Nu HoRIzons*, at the Harish-Chandra Research Institute.

TUTORING

I have been a tutor for four courses over the span of my Ph.D. time at my institute. This has involved, at various times, leading discussion sessions involving the students in their assignments, grading assignments and examinations, and for a *numerical methods* course that I have tutored twice, each in Spring 2010 and 2011, I have given lectures on C/C++ programming for the students.