

Suprabh Prakash

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Curriculum Vitae

Personal

Date of Birth: 7th December 1984

Gender: Male

Nationality: India

Civil status: Unmarried

Affiliation

Department of Physics

Indian Institute of Technology Bombay

Powai, Mumbai 400076

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OBJECTIVE

A postdoctoral fellowship in Neutrino Physics Phenomenology

EDUCATION

Ph.D, Neutrino Oscillation Phenomenology

expected July 2013

Supervisor: S. Uma Sankar

Indian Institute of Technology Bombay, Powai, Mumbai, India

THESIS: A comparative study of upcoming superbeam long baseline experiments

Master of Science, Physics

May 2009

Thesis advisor: S. Uma Sankar

Indian Institute of Technology Bombay, Powai, Mumbai, India

THESIS: A study of matter effects in neutrino oscillations

Bachelor of Science, Physics (Honors)

May 2007

Faculty of Science, Banaras Hindu University, Varanasi, India

COMPUTING SKILLS

- Computer programming languages: FORTRAN 90, C and C++
- Software: GLoBES(General Long Baseline Experiment Simulator) for neutrino oscillation physics

PROJECTS

Work done

- A study of matter effects in Neutrino Oscillations
- The 2540 km long baseline superbeam experiment
- A study of the neutral current backgrounds in the $\nu_\mu \rightarrow \nu_e$ oscillation channel in a Water Cerenkov detector and finding the Migration matrices for proper reconstruction of neutral current events
- A study of the physics capabilities of the FNAL-Homestake 1300 km LBL superbeam experiment with a Water Cerenkov detector
- Studying the capabilities of a liquid Argon detector with Atmospheric neutrinos

- A study of the long baseline experiments NO ν A and T2K. In a follow up work, we inquired the capabilities of the reoptimized NO ν A experiment in light of large θ_{13} and with a 10 kton liquid argon detector added.
- Studying the capabilities of present and upcoming long baseline superbeam experiments to resolve the octant of θ_{23} .

Work in progress

- A study of the physics potential of the experiment MINOS+.
- A work on a possible decay mode of the Higgs boson.

PROFESSIONAL EXPERIENCE

Talks and Seminars

- *Mass hierarchy sensitivity with upcoming long baseline neutrino experiments*, at the XIIIth International workshop on Neutrino Factories(NuFACT 11), Super beams and Beta beams, CERN Switzerland. August 2011.
- *A tutorial on the GLoBES software*, at iCAPP workshop on Neutrinos beyond Standard Model, PRL Ahmedabad. September 2011
- *Getting the best out of NO ν A and T2K*, at the Nu Horizons V, HRI, Allahabad, February 2012
- *Getting the best out of NO ν A and T2K*, at the 36th International Conference in High Energy Physics 2012 (ICHEP12), University of Melbourne, Melbourne, Australia. July 2012.
- *Getting the best out of NO ν A and T2K*, at the 7th Neutrino Oscillation Workshop (NOW 2012), Conca Specchiulla, Italy, September 2012
- *Determination of Mass hierarchy and Leptonic CP violation*, at The High Energy, Cosmology & Astroparticle Physics Section of the ICTP, Miramare - Trieste, Italy, September 2012
- *Determination of Mass hierarchy and Leptonic CP violation*, at Istituto Nazionale di Fisica Nucleare, Sezione di Padova, Italy, September 2012
- *Resolving mass hierarchy, leptonic CP violation and octant of θ_{23} with T2K and NO ν A*, at XX DAE-BRNS High Energy Physics Symposium, Vishwa Bharati, Santiniketan, January 2013

Posters

- *A study of NC backgrounds in the $\nu_{\mu} \rightarrow \nu_e$ channel*, at XIX DAE-BRNS High Energy Physics Symposium, LNMIIT Jaipur. December 2010
- *The 2540 km LBL superbeam experiment*, at International Neutrino Summer School in Geneva, Switzerland. July 2011
- *Determination of Mass hierarchy and Leptonic CP violation with LBL superbeam experiments*, at Lepton Photon 2011, TIFR Mumbai. August 2011

Schools

- *Winter school on High Energy Astrophysics*, Kodaikanal. December 2009
- *International Neutrino Summer School* in Yokohama, Japan. August 2010
- *Preparatory School in Theoretical High Energy Physics* organized by SERC at BITS, Goa in October 2010. The courses included Group Theory, Quantum Field Theory, The Standard Model of Particle Physics, General Relativity and Statistical Methods
- *Main School in Theoretical High Energy Physics* organized by SERC at Jamia Millia Islamia, New Delhi in February 2011. The courses included Black hole physics, New physics at the LHC and Inflationary Cosmology
- *International Neutrino Summer School* in Geneva, Switzerland. July 2011

TEACHING EXPERIENCE

- *General Physics laboratory course for B. Tech 1st year.* (Autumn 2009, Spring 2010, Autumn 2010, Spring 2011, Autumn 2011 and Spring 2012)- Instructor for a couple of experiments(Moving coil galvanometer & Grating spectrometer) and journal grading.
- *Elementary Particle Physics course for B. Tech(Engineering Physics) 4th year and M.Sc.(Physics) 2nd year.* (Spring 2011 and Spring 2012)- Tutorials discussion and grading.

REFERENCES

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