

Speaker: Rahul Roy

Rudolf Peierls Centre for Theoretical Physics,
Oxford University



Lecture 1: Topological insulators and adiabatic cycles

Tuesday August 9 2011, 4 PM in AG 69 (DTP Colloquium)

Lecture 2: Topological phases and topological invariants (I)

Thursday August 11 2011, 4 PM in A304

Lecture 3: Topological phases and topological invariants (II)

Wednesday August 17 2011, 2:30 PM in A304

Dr Rahul Roy earned his B.Tech degree at IIT Mumbai and his Ph.D. at the University of Illinois, Urbana-Champaign, following which he took up a post-doctoral fellowship at Oxford University. He has the distinction of having predicted a new state of matter, the three-dimensional topological insulator. This is considered a seminal contribution to the subject. For this work he was recently awarded the Macmillan prize (jointly with Fu) which recognises outstanding contributions by a young condensed matter physicist.

The Āryabhata Visitorship has been established in 2011 to invite outstanding young investigators in different areas of Theoretical Physics to visit the DTP for an extended period – preferably a month or so – and interact with faculty, post-doctoral fellows and students. During their visit, Āryabhata Visitors are required to deliver a series of at least three or four lectures on their research topic and related areas. Whenever possible the first lecture in the series should be a Theoretical Physics Colloquium aimed at a wide audience of theoreticians. Researchers who have completed 2-8 years after their Ph.D. are eligible for this award. Nominations can be made by any faculty member of DTP.



The visitorship is named after the ancient Indian mathematician-astronomer Āryabhata (circa 476-550 CE). His most famous surviving manuscript, the Āryabhatīya, was written at the age of 23. He made several mathematical breakthroughs in arithmetic, algebra and trigonometry while his astronomical research investigated the motion of the solar system, eclipses and sidereal motions. Āryabhata argued that the apparent movement of the stars is not a rotation of the sky, as was then believed, but a relative motion caused by the rotation of the earth. The modern name of the sine function originated with him, and he correctly computed the value of π to five decimal places.