

Chennai Mathematical Institute

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The Chennai Mathematical Institute (CMI) is one of the important centres in India for research in and teaching of mathematical sciences. The Institute is recognised as a University by the Indian government and awards bachelors, masters and doctoral degrees.

History

CMI began as a research institute in 1989 which carried out only a PhD programme. In 1998, the institute ventured into teaching, with an undergraduate course for Mathematics and Computer Science. An undergraduate course in Physics was added a few years later. Parallel to this, CMI began its Masters programmes in Mathematics and Computer Science. A new Masters course in Applications of Mathematics was started in 2010.

The institute was founded by C S Seshadri, an internationally renowned algebraic geometer. The present Director is Rajeeva Karandikar, who is an expert in probability theory and statistics. The institute has a talented group of about 30 permanent faculty members who have strong academic ties with reputed institutions in India and abroad. The institute also attracts a regular stream of academic visitors, both from India and abroad.

Research

The main areas of research in Mathematics pursued at the Institute are algebra, analysis, differential equations, geometry, probability, statistics and topology. In Computer Science, the main areas of research are formal methods in the specification and verification of software systems, design and analysis of algorithms, computational complexity theory and computer security. In Physics, the research carried out is mainly in gravitation, quantum field theory, string theory and mathematical physics.

One of the unique features of CMI in the context of academics in India is the combined emphasis on research and teaching. All over the world, it is recognised that academic excellence is best cultivated by enabling the interaction between high quality researchers and talented students. In India, this interaction has been inhibited by the fact that most research institutions have been set up outside the university system. In recent years, the government has begun to invest in national institutions to promote research and teaching in basic sciences, but CMI's initiative predates these efforts by almost a decade.

Teaching

The teaching programmes at CMI are run in collaboration with the Institute of Mathematical Sciences (IMSc), Chennai. The courses are taught by personnel in the faculties of CMI and IMSc, Chennai, as well as distinguished visiting scientists from other academic institutions such as the Tata Institute of Fundamental Research (TIFR), Mumbai, the Indian Statistical Institute (ISI), the Indira Gandhi Centre for

Atomic Research (IGCAR), Kalpakkam, the Indian Institute of Technology (IIT), Madras, Chennai, the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune and the Ecole Normale Supérieure (ENS), Paris.

Students from CMI have gone on to pursue further studies at the best academic institutions in India and abroad. These include Caltech, Chicago, MIT, Princeton, U Penn and Yale in USA, ENS Paris, Univ Paris-Sud and Univ Bordeaux in France, the Max Planck Institutes and Humboldt University in Germany and the Harish-Chandra Research Institute, IITs, IMSc, ISI and TIFR in India.

Although the majority of students from the institute continue in Mathematics, Computer Science and Physics, CMI graduates have also moved into areas such as financial mathematics, management and economics, both in India and abroad. Some students from CMI have also been placed in some of the best software companies in India.

Exchange Programmes

CMI has numerous exchange programmes in place. It has a formal agreement with the ENS, Paris, France, one of the leading institutions in the world in teaching and research in Mathematics, for regular visits by academic members and students of CMI and ENS, Paris working on Mathematics and Computer Science. The institute has a similar arrangement with Ecole Polytechnique in Paris for CMI students working on Physics. The institute also has a formal agreement with the Ecole Normale Supérieure in Cachan, France, for exchange of BSc and MSc students, as well as for a joint PhD programme in Computer Science and Mathematics.

Director of CMI, Rajeeva Karandikar

CMI is one of three non-European partners in the Erasmus Mundus Master Programme, Algebra Geometry And Number Theory (ALGANT), funded by the European Union. The ALGANT programme allows students to pursue Masters and Doctorate degrees across institutions participating in the programme.

Infrastructure and Funding

The institute's campus is located in the State Industries Promotion Corporation of Tamil Nadu (SIPCOT) Information Technology Park in Siruseri, on the outskirts of Chennai. CMI's programme is fully residential. All students are accommodated in the hostel on campus. The institute has a regular transportation arrangement for students to visit the city for shopping and other activities.

Another unique feature of CMI, in the context of India, is that its funding comes from diverse sources, both public and private. This has given the Institute the freedom to organise its activities in a manner that is best suited to achieving its goal of excellence in research and teaching.

The institute receives substantial support for its activities from the Department of Atomic Energy (DAE), through the National Board for Higher Mathematics (NBHM).

The institute also receives generous contributions from the private sector. During the formative years of

the institute, the Southern Petrochemical Industries Corporation (SPIC) has been a major source of funding and infrastructural support for CMI. Currently, the Shriram Group Companies, Chennai play a crucial role in providing and organising private funding for the Institute.

Information

More information about CMI's activities is available from the Institute's website, <http://www.cmi.ac.in>.

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