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## **India a world mathematics power, says professor Raghunathan**

R. Ramachandran

“I count, therefore I count,” runs the slogan in one of the posters designed for the 2010 International Congress of Mathematicians (ICM) scheduled to be held during August 19-27 at Hyderabad. It is as if to emphasise that the fundamental truth of existentialism in the modern world needs a reformulation and Descartes' philosophy centred on one's thinking ability alone is restrictive. That is, to be counted as an individual, and to define one's existence in today's world, one should have mathematical ability as well.

March 31 is the 414<sup>th</sup> birth anniversary of Rene Descartes, the French philosopher-mathematician, who gave us the Cartesian coordinates to identify points on a plane and essentially laid the foundation for much of modern mathematics by unifying geometry and algebra. The department of science and technology (DST) rightly chose this date to brief the media about the upcoming ICM.

Since ICM began in 1897 in Zurich, India will be hosting this major international gathering of mathematicians for the first time. India will be the third Asian country to do so after Kyoto in 1990 and Beijing in 2002. The year is also significant for Indian mathematics as it is the centenary year of the founding of the Indian Mathematical Society and the Silver Jubilee Year of the Ramanujan Mathematical Society.

ICM has been held continuously every four years except for breaks during the two World Wars. According to Professor M.S. Raghunathan of the Tata Institute of Fundamental Research (TIFR), the Chairman of the Local Organising Committee for ICM, who gave a short introduction to the ICM, initially the Congress was almost wholly European affair; only in the post-war period it has steadily grown to include other parts of the world as well.

Since 1962, the ICMs are being held under the auspices of the International Mathematical Union (IMU).

Currently IMU has 75 member countries and includes most of the Asian countries. India became a member of IMU in 1954, only two years after its inception in its post-war Avatar, even though it had played a significant role in the formation of the new IMU. K. Chandrasekharan, an eminent Indian mathematician who was then at TIFR and is now at ETH, Zurich, served with distinction on the IMU Executive Committee for a period of 24 consecutive years, five of them as its Secretary and four as its President.

India made a bid for hosting the Congress in 2004. Canada and Australia were other bidders. While Australia withdrew its bid earlier, Canada stuck with its bid but India managed to win over Canada. “This is indicative of India's stature in the world of mathematics today,” said Professor Raghunathan. “While the numbers in India are small and on the average Indian mathematicians may not have a good standing, the peaks are world class,” he remarked.

“We made a good presentation to the IMU. What clinched in India's favour was perhaps due to the enormous backing that the government gave to hosting the Congress, something that was not evident in the case of the others,” Professor Raghunathan said. Recent Congresses have seen as many as 3,500 delegates participating with more than half participating from outside. A similar number is expected to attend the Hyderabad Congress as well.

The highlight of all ICMs is the announcement and award of the Fields Medal, the highest award in mathematics, which is given once in four years at the ICMs and is administered by the IMU. Up to four Fields Medal awards may be awarded at one time.

Regarded as the equivalent of the Nobel Prize in mathematics, it is given only to mathematicians not over the age of 40 but the monetary value (\$16,000) is far less than the Nobel Prize.

Two other prestigious awards in mathematics are also given at the inauguration of the ICMs: the Nevalinna Prize, being given since 1982, for work in mathematical aspects of computer science, and the Gauss Prize, initiated in 2006, for outstanding mathematical contributions that have significant applications in other fields. One may recall that Madhu Sudan, a mathematician of Indian origin won the 2002 Nevalinna award. Three mathematicians of Indian origin are considered by many to be among the front runners for the Fields Medals at Hyderabad, according to Professor Raghunathan.

At the Hyderabad ICM, a new prize, the Chern Prize, named after S.S. Chern, a Chinese-American mathematician and a towering figure in 20<sup>th</sup> Century geometry will be awarded for lifelong outstanding achievements in mathematics.

In Chennai, C.S. Seshadri, director, Chennai Mathematical Institute, said as a new feature, an International Congress of Women Mathematicians, initiated by the “European Women in Mathematics” will be hosted this year. There would be other satellite conferences held before and after the congress, he said.

R. Balasubramanian, director, Institute of Mathematical Sciences, and R. Parimala of the Tata Institute of Fundamental Research, will be among the around 20 mathematicians who will deliver plenary talks apart from the nearly 200 invited talks scheduled. A panel discussion would be held as part of the Congress to discuss how to take mathematics to high schools.

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