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## A first: Indian woman gets top science prize

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NEW DELHI: It's perhaps the first international recognition of an Indian woman scientist. Ramadorai Sujatha, an associate professor in mathematics at the Tata Institute of Fundamental Research (TIFR), Mumbai has been awarded the Ramanujan Prize for 2006 by the world-renowned Abdus Salam International Centre for Theoretical Physics (ICTP), located at Trieste, Italy.

The ICTP, established 42 years ago at the initiative of Pakistani Nobel prize winner Abdus Salam, is supported by the Italian government and two United Nations bodies — UNESCO and International Atomic Energy Agency (IAEA).

Eighty Nobel laureates, including giants like Werner Heisenberg Paul Dirac, have been associated with it. The prize was instituted last year and is named after the Indian mathematical genius Srinivasa Ramanujan who lived and died in obscurity in Tamil Nadu, writing brief notes and formulas in notebooks that scientists continue to ponder upon and explore.

Sujatha, 44, has been working at the TIFR since 1985. Her work is related to certain kinds of equations that describe elliptic curves, on which the Japanese mathematician K Iwasawa did pioneering work.

This complex branch of mathematics has relevance to an increasingly important field in modern information technology — encryption, that is, putting signals into codes.

More and more effort is being concentrated on developing codes that can't be broken in order to safely communicate financial transactions, personal information and military data.

Mathematical systems like the ones that Sujatha has developed could become the basis of future systems, as they are very difficult to break.

Her work may also have relevance for quantum mechanics. Research in pure mathematics in India — which gave the world the concept of zero — is losing steam, with only a few institutions like TIFR, Indian Statistical Institute and Indian Institute of Science involved in a substantive manner.

In the nineties, the number of published papers in mathematics has declined by nearly 30%, although leading mathematicians continue to find prominence in international forums, like the Annual Conference of the International Mathematics Union.

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