

# Editorial

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In even numbered years not divisible by four, i.e., '02,'06,'10 etc, some important international events take place. Of immense interest to the majority of the world's citizens is the Football World Cup. This year Germany was the host and the event took place from 9 June to 9 July. Although only 32 nations participated in the last leg of the World Cup, it captured the undivided attention of the whole world.



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A far more subdued event, but certainly one viewed with as much passion by the mathematics community, is the holding of the ICM – International Congress of Mathematicians – once in four years. The twenty fifth ICM was held in Madrid, Spain, from 22–30 August 2006. Over 3600 delegates from 137 different countries participated in the event. King Juan Carlos I of Spain presided over the opening ceremony. The climax of this ceremony was the presentation by the King of Spain of the four Fields medals considered equivalent to the Nobel Prize in mathematics. The medal has been named after the Canadian mathematician John Charles Fields (1863–1912). Two to four Fields medals can be awarded at each ICM. Only those mathematicians below the age of forty are eligible to receive them since the medal is viewed as an incentive to encourage further effort in their line of research. They were first awarded at the ICM held in Oslo in 1936. The obverse of the medal shows Archimedes and the motto "*Transire Suum Pectus Mondoque Polir*" – To transcend one's spirit and take hold of the world. The reverse side has the inscription in Latin, "Mathematicians having congregated from the whole world awarded (this medal) because of outstanding writings". The name of the medalist is engraved on the rim of the medal. The four winners this year were Andrei Okounkov, Grigory Perelman, Terence Tao and Wendelin Werner.



The citation in the case of Okounkov, who was born in Moscow and is now professor at Princeton University, reads “for his contributions bridging probability, representation theory and algebraic geometry”. In the case of Perelman, he was honoured for his “contributions to geometry and his revolutionary insights into the analytical and geometric structure of Ricci flow”. His work during 2002–2003 on the study of evolution equations and their singularities provided a way of resolving two outstanding problems in topology – the Poincaré Conjecture and the Thurston Geometrization Conjecture. Perelman was born in the former Soviet Union, received his doctorate from St Petersburg State University and was for some years a researcher at the Steklov Institute of Mathematics. Thirty-one year old Tao was honoured for his “contributions to partial differential equations, combinatorics, harmonic analysis and additive number theory”. Together with Ben Green, Tao had proved the long standing conjecture that there exist arbitrarily long arithmetic progressions among primes. He was born in Adelaide, Australia, received his PhD from Princeton and is at present a professor at UCLA. Werner received the medal for his “contributions to the development of stochastic Loewner evolution, the geometry of two dimensional Brownian motion and conformal field theory”. His work has developed a framework for understanding critical phenomena in physical systems and has potential connections to a wide range of applications. Werner is a professor at the University of Paris-Sud at Orsay.

Grigory Perelman, in spite of the strict confidentiality surrounding the award of the medal, was certain to be among the medalists this year for his work on the Poincaré Conjecture. Rumour was rife that he would refuse to accept the medal and that is what happened. The story of Perelman would have to wait for another editorial.

