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## Dirac medal for atomic physicist

8 August 2006

**Peter Zoller of the University of Innsbruck has been awarded the 2006 Dirac medal of the International Centre for Theoretical Physics (ICTP) in Trieste, Italy. Zoller, the scientific director of the Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences in Innsbruck, is honoured for his work in atomic physics, including proposing the use of trapped ions for quantum computing. The Dirac medal -- one of the world's most prestigious physics prizes -- is given each year on 8 August, the birth date of Paul Dirac.**

Apart from his "seminal" work in proposing methods to use trapped ions for quantum computing, Zoller is also honoured by the ICTP for "describing how to realize the Bose-Hubbard model and associated phase transitions in ultracold gases". The Bose-Hubbard model is commonly used to describe how bosons behave in an "optical lattice" -- a regular, 3D crystal-like potential created by a web of interfering laser beams. Zoller has been a key figure in the burgeoning field of quantum information, having, for example, devised several protocols for quantum communication based on entangling two or more ultracold atoms.

The Dirac medal, worth \$5000, has been awarded every year since 1985 by the ICTP, which is based in Trieste, Italy. Nobel laureates and winners of the Fields medal or Wolf prize are not eligible for the award. Dirac was a close friend of the ICTP from the centre's early days in the early 1960s until his death in 1984.

### About the author

Martin Griffiths is writer/editor at *Physics World*



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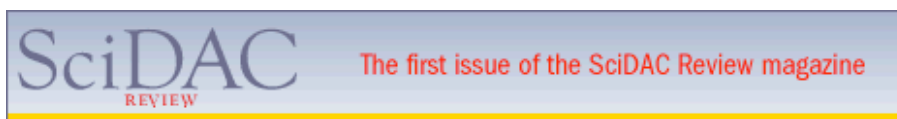
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