

Quantum Technologies: bilocation, teleportation

and other quantum marvels




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Prof. Francesco Saverio Cataliotti

All technologies derive their power and their limitations from the laws of physics. Thus, bringing technology to a new and broader physical framework can provide fundamentally new capabilities. Quantum technologies support entirely new modes of computation with qualitatively new and powerful algorithms based on quantum principles, that do not have any classical analogues; they also offer provably secure communications, simulation capabilities unattainable with classical processors and sensors and clocks with unprecedented sensitivity and accuracy.

Francesco Saverio Cataliotti, born 4th of March 1971, received his Laurea degree and PhD in Physics from Università di Firenze in 1994 and 1998 respectively. He has been scientific guest of Max-Planck-Institut für Quantenoptik from 1998 to 2000. He has been Associate Professor of Structure of Matter in Università di Catania from 2002 to 2007. He is Associate Professor of Structure of Matter since 2007 in Università di Firenze where he is associated to the European Laboratory for Nonlinear Spectroscopy since 1994. His research activity is mainly experimental and is centered on atomic physics and atom-laser interactions. It can be divided in lines that, starting from nonlinear atom-laser interaction, develop into the manipulation of the atomic momentum state, laser-cooling and the realisation of Bose-Einstein condensates. The optical manipulation of condensates has allowed to investigate problems concerning superfluidity and macroscopic quantum states. More recently he has been concerned with coherent micromanipulation techniques with perspectives ranging from quantum computation to single bio-molecule manipulation

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