



Profs Polzik's and Cirac's research, on the CNN

A key quantum teleportation experiment, thought at ICFO, in the news

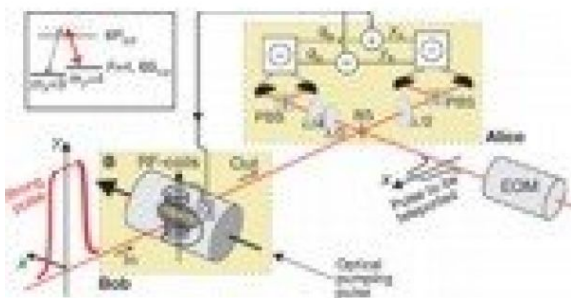
October 20, 2006

The Cable News Network, commonly known as CNN, has recently highlighted the latest achievement on teleportation of ICFO's distinguished invited Professors, Eugene S. Polzik and Ignacio Cirac.

Until now scientist have teleported similar objects such as light or single atoms over short distances from one spot to another in a split second. Professors E. S. Polzik (Niels Bohr Institute in Denmark) and I. Cirac (Max Planck Institute for Quantum Optics in Germany), and co-workers, have made a breakthrough on teleportation by using both light and matter. For the first time teleportation involves two different objects, photons (light) and atoms (matter). Light is the carrier of information and matter is the storage medium.

Profs Polzik and Cirac have developed a method that allows teleportation to be taken over longer distances because it involves light as the carrier of entanglement. The achievement represents a landmark advance in the field of quantum information.

In their paper, published in Nature, Profs Polzik and Cirac express their gratitude for the collaboration and support received from ICFO, where the idea of this experiment was conceived. In ICFO, the quantum optics group lead by Professor Jürgen Eschner is also working on a somehow related project that aims at creating a quantum entanglement state between two single ions over long distances.



Experimental set-up for teleportation of light onto an atomic ensemble



(from left to right) Christian Kazstelan, Henning Fehrmann and Marek Rams