ICFO in El Pais

The development of a Quantum Transceiver is the topic of a feature in the national newspaper.

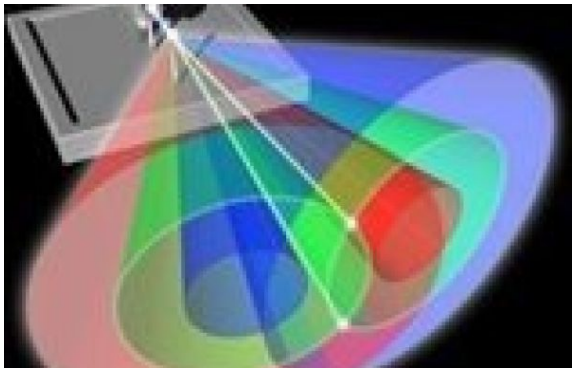
May 20, 2008

The European Space Agency (ESA) has hired a consortium of Spanish companies and research centers to carry out a fascinating project involving the design and manufacture of a Quantum Transceiver for space applications. This story is described in the national newspaper El Pais by journalist Jose Angel Martos. The project is a key step to implement secure quantum cryptography in space.

The consortium is formed by three ICFO groups led by Professors Valerio Pruneri, Juan Perez and Morgan Mitchell: a research group based at the Universidad Politecnica de Valencia, a group at the Universidad Complutense de Madrid, and companies which include Tecnologica

(the Project Coordinator), space giant Thales Alenia Space, and two SMEs, Emxys and Lidax, which are in charge of the electronic design and thermal control of the device, respectively. The prototype of the quantum transceiver is to be ready by June 2010. The device may be installed in the International Space Station and may communicate with two terrestrial stations in Tenerife and Calar Alto (Spain).

The specs of the device need to match the requirements of a space mission: small sizes (a box no larger than 20 cm), little weight (less than 3 kg) and low power consumption (less than 15 W). "Meeting these requirements is a fascinating challenge and a great integration and optimization effort", said ICFO's Group Leader and Scientific Project Leader, Valerio Pruneri. The space challenge will also provide a more portable technology for terrestrial applications.



A schematic representation of a quantum transceiver

Professor Glauber with ICFO students