ICFO Colloquium IAN WALMSLEY 'Quantum Photonic Networks: Building Large-Scale Quantum Machines out of Light'

IAN WALMSLEY

September 02, 2013

Monday, September 2, 2013, 12:00. ICFO?s Auditorium

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Non-classical states of light enable new modes of new modes of communications, sensing and computation. A key objective of current research is the construction of a scalable photonic quantum network that will facilitate the preparation of distributed quantum

correlations among light beams, and enable new quantum-enhanced applications. Such a network can be constructed by means of pure-state quantum light sources, linear optical operations, measurement by photodetectors, and storage in a photonic quantum memory. I will discuss recent progress in developing a scalable network using such components, and describe some recent applications in quantum simulation, communication and metrology.

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Hosted by Prof. Jens Biegert