

» Physics of Information Colloquium «
Jointly with the Quantum Computation and Information Seminar

Engineering Quantum Causes



Gerard J Milburn

(University of Queensland and Imperial College)

Date and time: Thursday 17 May 2018, at 17:00

Location: Abreu Faro Amphitheatre, Interdisciplinary Building, IST, Lisbon

Abstract:

Are cause and effect objective facts about the world? Many philosophers doubt it. Physicists ground causation objectively in terms of Lorentz invariance: a central feature of quantum field theory. Yet the pioneers of quantum mechanics lamented the demise of classical causality and the violation of various Bell-like inequalities raise new questions. Nonetheless, advancing quantum communication technologies seek to exploit non classical quantum correlations to perform tasks impossible in a classical world. Quantum information theorists have recently discovered new quantum causal relations beyond Bell, yet the physical meaning of this discovery remains unclear. In this talk I will review some of the recent theories on classical and quantum causation and explain how ion trap quantum technologies might be used to engineer novel causal relations in a laboratory setting.

Organized by:

- Physics of Information and Quantum Technologies Group, Instituto de Telecomunicações
- QuantERA project TheBlinQC – Theory-Blind Quantum Control



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For more information, see: dp-pmi.org/colloquium