CHERWELL - SIMON LECTURE

QUANTUM GAMES AND QUANTUM INFORMATION

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Friday 18th May

4.30 p.m.

Martin Wood Lecture Theatre,
Clarendon Laboratory, Parks Road, Oxford

A quantum magician can play tricks that defy our classical imagination. For example, futuristic quantum dice rolled at an arbitrary distance can show the same number, or quantum balls hidden under a cup can exhibit colors impossible in any classical scenario. These are just two examples of challenges to a classical view posed by experiments testing the foundations of quantum physics. Such experiments became seminal in the development of Quantum Information science and technology. Recent experiments with single and entangled photons include long-distance teleportation and blind quantum computation. There an algorithm can be run on a future quantum server such that the server's operator cannot gain any knowledge, not even in principle about the algorithm used. The central assumption in all these scenarios is the correctness of quantum theory.