



Algebra and Number Theory Seminar

Title: From Bits to Qubits : An Introduction to Quantum Shannon Theory

Speaker: Ciara Morgan (Centre for Quantum Technologies, National University of Singapore)

Date: Thu 19th January 2012 at 3:00PM

Location: CASL Seminar Room – Belfield Office Park

Abstract: The field of Quantum Shannon Theory is dedicated to the generalisation and extension of concepts owed to Claude Shannon, the father of information theory, in his work on classical information communication to the quantum world. The diversity of the types of information possible in the quantum setting together with the potential for using quantum entanglement as a resource, makes the field of Quantum Shannon Theory interesting and the results often surprising. In this seminar we give an informal introduction to quantum information and Quantum Shannon Theory, with particular emphasis on quantum channel capacities.