



Analysis Seminar

Title: Non-commutative graph parameters and quantum channel capacities

Speaker: R. Levene

Date: Tue 10th October 2017 at 3:00PM

Location: UCD Science North 125

Abstract: We generalise some graph parameters to non-commutative graphs (a.k.a. operator systems of matrices) and quantum channels. In particular, we introduce the quantum complexity of a non-commutative graph, generalising the minimum semidefinite rank. These parameters give upper bounds on the Shannon zero-error capacity of a quantum channel which can beat the best general upper bound in the literature, namely the quantum Lovász theta number. This is joint work with Vern Paulsen (Waterloo) and Ivan Todorov (Belfast).