

# HONOURS SEMINAR

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## Absolutely Separable and Absolutely PPT States

April 12th

9:30AM

Mathematics and Statistics Lounge, CW307.20

### Abstract:

In quantum information theory, quantum states can be represented by positive linear functionals and their corresponding density matrices. Various criteria have been produced for determining properties of quantum states, like the positive partial transpose (PPT) condition. This talk will define separability and entanglement of quantum states and introduce some criteria for determining whether a given state is separable. Moreover, we will discuss absolutely separable and absolutely PPT states and present a theorem of N. Johnston that shows the equivalence of these two classes for the density matrix of a state  $\rho$  in  $M_2(\mathbb{C}) \otimes M_n(\mathbb{C})$ .