Drexel Analysis Seminar

November 3, 2017

10-10:50 AM, Korman 245

Speaker: Benjamin Grossman (Drexel)

Title: On the Preservers of Reversible Maps

Abstract: In the language of quantum information theory, a "quantum channel" is a completely positive and trace preserving map on the operators over a Hilbert space, and a "reversible map" is a quantum channel that has a left inverse which is also a quantum channel (in the same sense). In this talk, we'll discuss the connection between Poon's 2015 paper, "Preservers of Maximally Entangled States" and Puzzuolli and Watrous's 2017 paper, "Ancilla Dimension in Quantum Channel Discrimination". In particular, we'll see that combining the two results yields a classification of the linear maps that preserve reversible quantum channels. We'll also discuss possible avenues of generalizing this result.