

**UNIVERSITY OF HOUSTON  
DEPARTMENT OF MATHEMATICS**

**Analysis Seminar**

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**How close is "close" in quantum mechanics?**

**1:00 pm in 646 PGH**

**September 27, 2019**

**Abstract**

The talk will start with a broad crash course in quantum mechanics and quantum information theory. After introducing several measures of "closeness" between quantum states, we will present a notoriously simple Pinsker inequality relating some of these measures. A reverse inequality has been proven to be difficult to obtain and in some cases difficult to calculate. A recent result of the speaker provides a reversed Pinsker inequality in its most simple form. The result holds for any quasi-relative entropy and qubit states, or for finite-dimensional states and regular relative entropy or Tsallis q-entropy.