

Department of Mathematics

University of Houston

# Analysis Seminar

**FRIDAY, March 02, 2018**

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**13:00-14:00 – Room 646 PGH**

**Speaker:** Anna Vershynina (University of Houston)

**Title:** How fast can we actually go in a quantum world?

**Abstract:** One may say that due to entanglement, signals spread through a quantum system instantaneously. But can we send the actual information faster than light? The ground-breaking discovery was that, up to exponentially-small error, the information spreads with finite speed even in quantum systems. This is good news for the future of quantum technologies, since this finite speed makes local quantum systems essentially robust against small perturbations or errors. Mathematically, this result is known as Lieb-Robinson bounds. I will review the history of Lieb-Robinson bounds, their improvements, applications and will finish with a glimpse into the current work on the subject.