



# THE UNIVERSITY OF CHICAGO

## COMPUTATIONAL AND APPLIED MATHEMATICS COLLOQUIUM

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### Quantum Max Flow v. Quantum Min Cut and the Geometry of Matrix Product States

THURSDAY, February 15, 2018, at 5:00 PM  
Jones 226, 5747 South Ellis Avenue

#### ABSTRACT

According to Cui-Freedman-Sattath-Minton, tensor networks should be viewed as transporting quantities such as rank and entanglement. The transport in the classical cousin of a network based on a graph satisfies the classical max-flow=min-cut theorem. I will discuss the corresponding quantum max-flow and illustrate the failure of it to be equal to the quantum min-cut with examples motivated by representation theory and algebraic geometry. This is joint work with F. Gesmundo and M. Walter.

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