

# Colloquium

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## WHAT IS QUANTUM PROBABILITY?

Friday, September 20, 2013

3:00 p.m. in ES-143

(tea & coffee at 2:30 p.m. in ES-152)

ABSTRACT. Quantum mechanics is difficult for many people to understand because it is difficult to believe. The heart of the problem is quantum probability, which is an entirely rigorous theory; nonetheless even many working mathematicians have trouble believing it. (Quantum field theory is far from entirely rigorous, but that is a different topic.) In the past 15 years or so, work in quantum probability has greatly expanded in the guise of quantum computation and quantum information theory. In this talk, I will discuss some of the ideas of quantum probability, quantum computation, and quantum information, using the language of pure mathematics.