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MÜNCHEN

ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS



Arnold Sommerfeld Lecture Series

Professor Steven Girvin

Yale University, USA

Public Lecture:

Quantum Money, Information, and Computation - New Mysteries from the Quantum World

In the world of quantum mechanics, the Heisenberg Uncertainty Principle is a key feature that for many years was thought of as a limitation or disadvantage. Physicists have recently come to realize that quantum uncertainty can in fact be a useful resource to encrypt information securely, create 'quantum money' that cannot be counterfeited, 'teleport' quantum states from one place to another, and build quantum computers that can solve certain problems exponentially faster than classical computers. This talk will give an elementary introduction to these ideas and briefly describe current experimental attempts to construct the quantum bits that might someday form the building blocks of a practical quantum computer.

Monday, 8th June 09, 17:15 h, Lecture Hall E7, Schellingstr. 4, LMU