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ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS



Arnold Sommerfeld Lecture Series

Professor John Preskill
California Institute of Technology,
USA

Fields and Strings Seminar:

Holographic Quantum Codes

Two of the most amazing ideas in physics are the holographic principle and quantum error correction. The holographic principle asserts that all the information contained in a region of space is encoded on the boundary of the region, albeit in a highly scrambled form. Quantum error correction is the foundation of our hope that large-scale quantum computer can be operated to solve hard problems. I will argue that these two ideas are closely related, and will describe quantum codes which realize the holographic principle. These codes provide simplified models of quantum spacetime, opening new directions in the study of quantum gravity, though many questions remain.

Thursday, July 7, 2016, 16:15 h, Room A348 / 349, Theresienstr. 37, LMU