

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Using energy conditions to rule out exotic spacetimes

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General relativity allows the existence of many kinds of spacetimes, including those with wormholes, superluminal travel and time machines. However, in the context of quantum field theory, there are restrictions on the stress-energy tensor in the form of energy conditions and quantum inequalities. It has been proven that the Averaged Null Energy Condition (ANEC) is sufficient to rule out a variety of exotic phenomena. Proofs of ANEC existed in the past but only in flat spacetime. The work I am going to present proves that ANEC holds in space times with curvature using a derivation of a quantum inequality.

Tuesday, December 9, 2014, 2:30 pm
Cosman Seminar Room
Center for Theoretical Physics
Building 6C, Room 6C-442
Massachusetts Institute of Technology
Refreshments at 2:00 in the same room