

*Department of Mathematics,
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Math 295 - Mathematics Colloquium

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On the strong cosmic censorship conjecture in general relativity

Abstract:

An intriguing feature of the explicit charged (Reissner-Nordstrom) or spinning (Kerr) black hole spacetimes is the existence of a regular Cauchy horizon, beyond which the Einstein equation loses its predictive power. The strong cosmic censorship conjecture of Penrose is a bold claim that, nevertheless, such a pathological behavior is nongeneric.

In this lecture, I will give a short introduction to general relativity and the strong cosmic censorship conjecture. Then I will describe my recent joint work with J. Luk, where we rigorously establish a version of this conjecture for the Einstein-Maxwell-(real)-scalar-field system in spherical symmetry, which has long been studied by physicists and mathematicians as a useful model for this problem.

Host: Ioan Bejenaru

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4:00 PM

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