

# Cosmic Censorship in Anti-de Sitter Spacetime

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I will describe some recent results about cosmic censorship in asymptotically anti-de Sitter (AdS) spacetimes. I will first review a class of counterexamples to (weak) cosmic censorship in AdS involving just a Maxwell field coupled to gravity [1]. These are solutions in which the curvature grows without bound in a region of spacetime visible to infinity. I will then explain the weak gravity conjecture and show that when it is satisfied, these counterexamples go away [2]. Various generalizations will be discussed, always with the same conclusion: the weak gravity conjecture removes potential counterexamples to cosmic censorship [3].

I will also present a holographic argument in favor of the AdS Penrose inequality [4], which conjectures a lower bound on the total mass in terms of the area of apparent horizons. This inequality is often viewed as a test of cosmic censorship. This argument also applies to solutions with charge, resulting in a charged Penrose inequality in AdS.

## References

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