A Mysterious Cosmic Censorship-Weak Gravity Connection

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I will describe a surprising connection between two longstanding conjectures: cosmic censorship and weak gravity. I will first present a class of counterexamples to (weak) cosmic censorship in anti-de Sitter spacetime. 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. Various generalizations will be discussed with similar conclusions: in almost all cases the weak gravity conjecture removes potential counterexamples to cosmic censorship.