

The co-existence of null and spacelike singularities in the interior of spherically symmetric black holes

Dynamically formed singularities are expected in the interior of a generic black hole, a mechanism which plays a crucial role in the celebrated Strong Cosmic Censorship Conjecture. I will discuss my recent work on the interior of dynamical black holes resulting from spherically symmetric gravitational collapse. The main result shows the co-existence of two distinct types of singularities in two different regions of the spacetime: a weak null singularity with blow-up in H^1 norm (the Cauchy horizon), and a stronger spacelike singularity with blow-up in L^∞ norm. Our quantitative analysis reveals a transition region between these two singularities, where the Einstein equations exhibit a new regime.