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Crunch from AdS bubble collapse in unbounded potentials

Thursday, 10 July 2025 17:00 (20 minutes)

I am going to talk about a scalar field theory with a Minkowski false vacuum and an unbounded (or very deep) true vacuum. We will see compelling evidence that an AdS bubble of vanishing total energy, embedded in asymptotically flat spacetime, generically undergoes a spherical collapse which leads to a space-like curvature singularity after the formation of trapped surfaces and apparent horizons. The crunch singularity, which is hidden behind an apparent horizon, occurs before the true vacuum is reached, and the existence of a lower bound of the scalar field potential is not a necessary condition for its formation.

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