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Title: Spacetime Extensions of the Big Bang

Abstract: In this talk we show that a large class of $k = -1$ inflationary FLRW spacetimes dubbed 'Milne-like' admit continuous spacetime extensions through the big bang. For these spacetimes, the big bang appears as a coordinate singularity where the spacetime can be extended beyond it. This is analogous to how the $r = 2m$ event horizon in Schwarzschild is a coordinate singularity. The geometry of the big bang coordinate singularity for Milne-like spacetimes is that of a lightcone in a spacetime conformal to Minkowski space (or de Sitter space). We discuss how the mathematics of these Milne-like spacetimes may provide connections to certain problems in cosmology.