

Abstract Submitted
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Backreaction effects in initially contracting models of the Universe¹ LEDA GAO, PAUL R. ANDERSON, ROBERT S. LINK, Wake Forest University — The effects of radiation and particle production due to a massive conformally coupled scalar field on the evolution of the Universe are considered for models in which the universe initially contracts. The stress-energy tensor for the massive scalar field is renormalized using adiabatic regularization. This introduces higher derivative terms in the semiclassical backreaction equations which result in extra solutions that can often be physically unrealistic. A method similar to that of order reduction is used to remove the extra solutions.

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