Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Effects of Conformally Invariant Quantum Fields on Future Singularities - Part II[1] ANDREW J. LUNDEEN, JOHN R. EINHORN, ERIC D. CARLSON, PAUL R. ANDERSON, Wake Forest University — The effects of conformally invariant quantum fields on universes with future singularities are numerically investigated. It is assumed that these singularities are caused by dark energy in the form of a perfect fluid with a known equation of state. Comparison is made between the behaviors of the universe for a purely classical analysis, an order reduced quantum analysis, and a fully self-consistent semiclassical backreaction analysis. Numerical results for big rip (type I) and little rip cosmologies are presented. It is found, consistent with theory, that for one sign of the coefficient of $\Box R$ term in the trace of the semi-classical backreaction equations, the future singularity is always avoided, and the universe achieves a maximum size before recontracting, while for the other sign the universe is inevitably driven to expand forever, driving it to the singularity.

[1]Supported in part by the National Science Foundation under grant Nos. PHY-0856050 and PHY-1308325.

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Date submitted: 09 Jan 2014 Electronic form version 1.4