

General Relativity and Quantum Cosmology

Post-Inflationary Evolution via Gravitation

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We study a class of non-local, purely gravitational models which have the correct structure to reproduce the leading infrared logarithms of quantum gravitational back-reaction during the inflationary regime. These models end inflation in a distinctive phase of oscillations with slight and short violations of the weak energy condition and should, when coupled to matter, lead to rapid reheating. By elaborating this class of models we exhibit one that has the same behaviour during inflation, goes quiescent until the onset of matter domination, and induces a small, positive cosmological constant of about the right size thereafter.

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