

Abstract Submitted
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A Novel Investigation into a Multiple Big Bang Scenario¹

WILLIAM DUHE, TIRTIBHAR BISWAS, Loyola University of New Orleans — A unique way of realizing inflation has been proposed recently in the context of cyclic cosmology where the universe grows by a constant factor in each cycle. This leads to an overall exponential growth over many cycles. In a given cycle such a growth is possible if, for instance, “heavy particles” can decay into radiation (photons) leading to an increase in entropy. However, to sustain this mechanism over successive cycles, it is crucial to reproduce the heavy particles back through quantum scattering processes and re-establish thermal equilibrium between all the species. We attempt to prove the viability of a “multiple bang” scenario to produce known cosmological data as well as use it to predict fluctuations in the upcoming higher resolution plank telescope data. This paradigm opens doors for new investigations into the principles surrounding the content and origin of the universe.

¹Loyola University of New Orleans

William Duhe
Loyola University of New Orleans

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