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Tachyon-Dominated Cosmology: Status Update

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A Friedmann-Robertson-Walker spacetime with contents dominated by a gas of tachyonic particles undergoes expansion with inflection (cosmic jerk) and acceleration similar, but not identical, to that of dark-energy-dominated models. The testing of such a tachyonic model against observation, as an alternative to the standard model, is under way. Fitting the model to redshift and distance data for several thousand Type Ia supernovae yields values for such quantities as the Hubble parameter and the age of the universe again similar, but not identical, to standard-model results. Testing the model via features of the cosmic microwave background, and other observations, is in progress at this time.

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