General Relativity and Quantum Cosmology

The Schrodinger picture of standard cosmology

N. Barbosa-Cendejas, M.A. Reyes

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We consider a time independent Schrodinger type equation derived from the equations of motion that drives a single scalar field in a standard cosmology model for inflation in a flat space-time with a Friedman-Robertson-Walker (FRW) metric with a cosmological constant. We find that all the 1-dimensional bound state solutions of quantum mechanics lead to at least one exact solution for the dynamical equations of standard cosmology, and that these solutions resemble the most recurrent inflationary solutions found in the literature. The analogies derived from this approach may be used to realize a deeper understanding of the dynamics of the model.

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