



Trajectories in quantum cosmology

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Abstract

The simplest possibility to quantise gravitation consists in writing a Hamiltonian formulation of general relativity, define a Hilbert superspace of states and use the correspondance principle for the canonical variables. Restricting attention to the highly symmetric case of the Friedmann-Lemaître-Robertson-Walker cosmological solution and its perturbations permits to solve the Wheeler De Witt equation, which then takes the form of a timeless Schrödinger equation. Although the use of trajectories is considered irrelevant in many cases, when it comes to the evolution of the entire universe, it becomes an essential tool that permits not only to provide a solution to the time problem (at least in the minisuperspace approximation) but also to perform actual calculations and make cosmological predictions.