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Cherkas – Quantum mechanics allows setting initial conditions at a cosmological singularity: Gowdy model example.

It is shown, that initial conditions in the quasi-Heisenberg quantization scheme can be set at an initial cosmological singularity per se. This possibility is provided by finiteness of some quantities, namely momentums of the dynamical variables, at a singularity, in spite of infinity of the dynamical variables themselves. The uncertainty principle allows avoiding a necessity to set values of the dynamical variables at singularity, as a wave packet can be expressed through the finite momentums. Influence of the initial condition set in the singularity in such a way to amount of a matter under a vacuum state, arising during later evolution when the gravitational waves appear, is addressed as well. It is shown that, even choosing of some special state in the singularity minimizing late time expansion rate, some amount of matter under vacuum appear in the late time evolution.

Presenter: Dr CHERKAS, Sergey (Institute for Nuclear Problems, Belarusian State University)