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## Quantum Big Bounce scenario and primordial gravitational waves

Wednesday 25 September 2019 12:40 (20 minutes)

In my talk I will present a method to quantise and solve the dynamics of gravitational waves in a quantum Friedmann-Lemaitre-Robertson-Walker spacetime filled with radiation.

The classical model is formulated in the ADM formalism. The system is then de-parametrised and reduced phase space is found. With the use of phase space symmetry respecting quantisation map the perturbed quantum FLRW cosmology is obtained. As a result of such procedure the initial singularity is replaced with a quantum bounce, which can act as a mechanism for generation of primordial gravitational waves. The properties of Big Bounce scenario and emitted gravitational waves will be presented, both in the coherent states approximation and using the exact results.

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