

Seminarium Zakładu Fizyki Teoretycznej

Departament Badań Podstawowych
Narodowego Centrum Badań Jądrowych

Dec 7, 2022 (Wednesday), h. 11:15

The seminar will be held in room 207 @Pasteura 7

Aleksandra Pędrak
(BP2, NCBJ)

"Ascribing quantum system to Schwarzschild spacetime with naked singularity"

ABSTRACT: I will introduce the modification of the Affine Coherent States (ACS) quantization method by using a special case of Gelfand-Naimark-Segal (GNS) construction. I will present the quantization of the Schwarzschild black hole using the discussed quantization method. The novelty of the approach is quantization of both temporal and spatial coordinates. Quantization smears the gravitational singularity indicated by the Kretschmann invariant avoiding its localization in the configuration space. This way we resolve, to some extent, the singularity problem of considered black hole. The approach relies on using only the metric tensor so that it can be applied to other black holes with the metrics satisfying Einstein's equation.

*Best regards,
T. Altinoluk, M. Kowal, P. Małkiewicz, E. Sessolo, P. Zin*