Theory of Relativity Seminar

January 22, 2021 (Friday), 11:15

The seminar is held online:

https://us02web.zoom.us/j/81472116408?pwd=ZFd4RE91WmZidk5TYTIwY1gvL21pUT09

Meeting ID: 814 7211 6408; Passcode: 795365

Claus Kiefer

(University of Cologne)

“On the Quantum Fate of Black Hole Singularities”

Abstract: Under general conditions, gravitational collapse in general relativity predicts the occurrence of singularities. This is the content of the singularity theorems proven by Penrose, Hawking, and others. It is generally expected that a quantum theory of gravity will avoid the occurrence of singularities. Such a theory is not yet available in complete form, but the question of singularity avoidance can be addressed in existing approaches. I shall choose the framework of quantum geometrodynamics - the direct quantization of general relativity. Attention is restricted to spherically-symmetric cases. I shall show how the classical singularity can be avoided in two simple models - the collapse of a dust shell and the collapse of a dust cloud.

Kind regards,

Wojciech Kamiński (IFT FUW)

Jerzy Kowalski-Glikman (UWr & NCBJ)

Włodzimierz Piechocki (NCBJ)

Jacek Tafel (IFT FUW)