

# Seminarium Zakładu Fizyki Teoretycznej

Departament Badań Podstawowych  
Narodowego Centrum Badań Jądrowych

April 5, 2023 (Wednesday), h. 11:15

The seminar will be held in room 207 @Pasteura 7

Przemysław Małkiewicz  
(BP2, NCBJ)

## "Is Quantum Gravity written in the sky?"

### ABSTRACT:

The idea of this talk is to explain the basic principles on which the theories of quantum origin of the primordial structure in the Universe work, that is, to provide you with some basic facts that you will not get from a generic and more specialised talk on this subject. I will start with a brief characterisation of the initial state of perturbations, then discuss cosmological perturbation theory in the Hamiltonian formulation, and finally describe the quantum generation of the primordial structure. I will conclude my talk with a brief discussion of the validity of the widely assumed Born-Oppenheimer approximation.

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