**Seminarium Szkoły Doktorskiej NCBJ**

**Thursday, 19th May, 9:00**

[**https://www.gotomeet.me/NCBJmeetings/phd-seminar**](https://www.gotomeet.me/NCBJmeetings/phd-seminar)

**Speaker:**

**Alice Boldrin (Szkoła Doktorska NCBJ)**

**Title:**

**Gauge-fixing and spacetime reconstruction in the Hamiltonian theory of cosmological perturbations**

**Abstract:**

I will present a general formalism for the Hamiltonian description of any spatially homogeneous spacetime in perturbation theory. I will employ and refine the Dirac method for constrained systems, which is very well-suited to cosmological perturbations. This approach includes a discussion of the gauge-invariant dynamics of perturbations as well as an analysis of gauge transformations, gauge-fixing, partial gauge-fixing and spacetime reconstruction. I will introduce the Kuchař parametrization of the kinematical phase space as a convenient tool for studying the gauge transformations.