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## Dirac analysis of cosmological perturbation theory.

*Monday, 21 January 2019 11:45 (45 minutes)*

I will talk about the Dirac procedure for constrained systems applied to the Arnowitt-Deser-Misner formalism linearized around the Friedmann-Lemaitre universe. I will employ some basic concepts such as Dirac observables, Dirac brackets, gauge-fixing conditions, reduced phase space, physical Hamiltonian and physical dynamics, and the canonical isomorphism between different gauge-fixed surfaces. The formalism is developed for the universe with a single fluid and then straightforwardly extended to the multi-fluid case. The obtained result is a starting point for future quantization of the cosmological perturbations and the cosmological background [arXiv:1810.11621].

**Presenter:** Mr MAŁKIEWICZ, Przemysław (National Centre for Nuclear Research)

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