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KOLOKVIJ FIZIČKOG ODSJEKA
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# Dynamics in the Ultracold - Atomic gases far from Equilibrium

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Far-from-equilibrium quantum field dynamics is one of the most challenging issues both in experimental and theoretical physics to date. Experiments exhibiting quantum statistical effects in the time evolution of many-body systems are extremely demanding. In particular, the preparation of ultracold atomic Bose and Fermi gases in various trapping environments allows to precisely study quantum many-body dynamics of strongly correlated systems. In recent years, the field has attracted researchers from a variety of disciplines, ranging from condensed-matter to high-energy particle physics and cosmology. A field theoretic approach to quantum many-body dynamics on the basis of functional techniques will be presented and its power to describe non-equilibrium and long-time dynamics of ultracold quantum gases illustrated.

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