

Classical fields for the quantum dynamics of ultra-cold Bose gases

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The phenomenon of Bose-Einstein condensation occurs due to the quantum statistics of identical bosons, but results in a state that can be described using an equation of motion for a classical field. In this talk we will give an overview of classical field approaches to the dynamics of Bose gases. We will demonstrate their application to quantum and classical phase transitions, and the resulting formation of topological defects in ultra-cold Bose gases.