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Title: Driven - Dissipative Dynamics in Photonic Bose-Einstein Condensate

Place: Seminar room 915

Driven - Dissipative Dynamics in Photonic Bose-Einstein Condensate

Photonic Bose-Einstein Condensate (PBEC) is a state of light where photons macroscopically occupy the lowest available state of the system. Due to the openness of the system, PBEC allows us to explore new states and phases, which would not be possible under closed system conditions. One way to probe the structure of the PBEC is through the second order correlation function $g(2)$. Moreover, it has been shown that the Fluctuation-Dissipation theorem holds in PBEC, since response of the condensate is directly related to the $g(2)$ function. This allows us to probe the structure of the condensate at high photon numbers, where the fluctuations are small and the $g(2)$ function is not feasible to access.

So far, the response has been observed from a pulse perturbation. Here we present an alternative method to probe the response of the PBEC - namely, via constant sinusoidal driving. In the talk I will give a general description of the PBEC and show the experimental data of a driven PBEC which we recently obtained in Bonn.