Speaker: **Andris Erglis (University of Freiburg)**

Title: **Photonic Bose-Einstein condensation in the continuum limit**

Date: **Monday, July 8th, 15:00 pm**

Place: **Seminar room 915**

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Abstract:

It is widely known that the Bose-Einstein condensate (BEC) does not occur in two-dimensional free photon gas. In this talk, I will start by giving a general introduction to the photon BEC. Next, I will present our findings of the Bose-Einstein condensation of steady-state photon gas situated in a planar cavity in the small mode spacing limit (continuum limit). Alongside the conventional threshold at which the photons undergo a phase transition at large mode spacings, we observe the emergence of a second threshold for sufficiently small mode spacings, defining the crossover to a fully condensed state. We observe a divergence in the critical particle number for vanishing mode spacings, hindering the formation of the BEC, consistent with the previous findings in the literature. Finally, I will discuss the mode occupations in the precondensate or supercooling region, emerging for small mode spacings.