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Correlated loss, conservative coherence transfer and diffusive coherent photonics

Abstract: Correlated loss is able to protect quantum correlations and create them. Correlated loss can lead to nonlinear loss and generation of non-classical states. In the seminar some results on coherence and population transfer in dissipatively coupled sets of quantum systems will be presented. It will be shown that correlated loss can lead to diffusive conservative propagation of coherence, and gives rise to such phenomena as equalization and non-Landauer erasure of quantum states.