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**Multimode squeezed light and its correlations.
The impact of losses.**

Polina R. Sharapova

Department of Physics, Paderborn University, D-33098 Paderborn, Germany

Multimode squeezed light is an increasingly popular tool in photonic quantum technologies, including sensing, imaging, and computing [1], where each mode serves as an information carrier. Under certain conditions, multimode squeezed light can carry orbital angular momenta that are an important resource used in various branches of quantum science and technology due to their unique helical structure and countably infinite basis [2]. Nonlinear waveguides are very promising for generating squeezed states of light due to the high degree of the electromagnetic field localization and dispersion tunability. However, imperfections during waveguide fabrication result in differences between the desired ideal and the fabricated waveguide, which may lead to a change of the properties of the generated states. This talk will highlight our recent advances in multimode squeezed light generation and characterization. It will highlight the impact of losses during state generation [3,4] and discuss how the correlated beams with high-order orbital angular momenta can be generated in cascaded schemes of nonlinear crystals [5].

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