

Alexandr Lvovsky

Title: Optical Schrödinger cats: breeding, entanglement and application

Abstract:

Superpositions of macroscopically distinct quantum states, introduced in Schrödinger's famous Gedankenexperiment, are an epitome of quantum “strangeness” and a natural tool for determining the validity limits of quantum physics. The optical incarnation of Schrödinger's cat – the superposition of two opposite-amplitude coherent states – is also the backbone of quantum information processing in the continuous-variable domain. The talk will cover recent experimental progress on preparing such states, applying them in quantum technology and communications, and increasing their amplitudes.