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# Quantum correlations and nonlinear dynamics of intense twin beams

Doc. RNDr. Ondřej Haderka, Ph.D.

IoP, Academy of Sciences of the Czech republic

Using intense pulsed laser sources to pump the nonlinear frequency down-conversion process leads to generation of intense twin beams. We have investigated the relation between correlation properties of twin beams at single-photon level and those containing macroscopic numbers of photon pairs. The methods of detection of spatial and spectral correlation in intense twin beams is presented and used to show how the correlation propagates from near-field to far-field. The investigation of correlation properties of twin beams on pumping energy gives insight into the dynamics of the nonlinear process. A complex dynamics of the process involving competition of large number of modes is revealed and compared with theoretical models.

When: Wednesday, **05/06/2019** at **14:00**

Where: Seminar room, HiLASE Centre, Dolní Břežany, Za Radnicí 828