

Seminar on Condensed Matter Theory

Group of Theoretical Physics at the Department of Condensed Matter Physics of Charles University has a pleasure to invite you to attend the seminar

on 14 March 2019 at 13:00

at Faculty of Mathematics and Physics of Charles University, Ke Karlovu 5, 121 16 Praha 2

Seminar room F052



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Anisotropy and polarization dependence of multiphoton carrier excitation in diamond

Anisotropy of multiphoton carrier generation in crystalline IIa diamond and its dependence on polarization state of excitation light (near-infrared few-cycle laser pulses) is investigated using photoluminescence and nonlinear absorption measurements. We observe anisotropy between multiphoton transition rates for light linearly polarized along and crystallographic directions of diamond and a strong intensity-dependent decrease of the transition rate for circularly polarized light. Measured results are compared with numerical simulations using time-dependent density functional theory and with an analytical model assuming a parabolic two-band system and the Houston function as the time-dependent wave function of the valence and conduction bands.

