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**Coherent defect-assisted multiphonon intraband carrier relaxation in semiconductor quantum dots** ALEXANDER PODDUBNY, Ioffe Institute, SERGUEI GOUPALOV, University of Utah & Ioffe Institute — A new defect-assisted mechanism of multiphonon intraband carrier relaxation in semiconductor quantum dots, where the carrier is found in a coherent superposition of the initial, final, and defect states, is proposed. It is shown that this mechanism is capable of explaining the observed trends in temperature dependences of the intraband relaxation rates for PbSe and CdSe colloidal nanocrystal quantum dots.

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