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Energies of higher optical transitions in semiconductor carbon nanotubes SERGUEI GOUPALOV, Jackson State University — We show that short-range electron interactions in semiconductor carbon nanotubes promote inter-subband coupling. This coupling is revealed in a significant alteration of energies of E_{33} and E_{44} optical transitions with respect to the predictions of the non-interacting model. The influence of the short-range electron interactions is traced analytically and numerically, by switching it off entirely or partly while calculating optical absorption spectra.

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