

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Study of low energy excitations of carbon nanotubes with DMRG**<sup>1</sup> ALEXANDER STRUCK, University of Kaiserslautern, SEBASTIAN A. REYES, Pontificia Universidad Católica de Chile, SEBASTIAN EGGERT, University of Kaiserslautern — We examine the low-energy properties of impure carbon nanotubes including short-ranged electron-electron interactions. In particular, we calculate the local density of states (LDOS) close to selected impurities such as Stone-Wales defect and half-fullerene caps at the tube ends using the density matrix renormalization group (DMRG). We discuss the possibility to identify interaction strength and range from LDOS patterns, which reveal the interplay of electron interactions and impurities.

<sup>1</sup>With special thanks to OPTIMAS and the DFG-funded “Transregio 49”

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Date submitted: 18 Dec 2009

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