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**Resonance Raman intensity excitation spectra of single wall carbon nanotubes** RIICHIRO SAITO, Dept of Phys, CREST JST, Tohoku Univ., JIE JIANG, CREST, JST and Tohoku University, ALEXANDER GRUNEIS, Leipnitz Institute for Solid State and Material Research, SHIN GRACE CHOU, Dept. of Chemistry, MIT, GEORGII SAMSONIDZE, Dept. of Electrical Eng, MIT, ADO JORIO, Dept. of Phys., UFMG, GENE DRESSELHAUS, Fransis Bitter Magnet Laboratory, MIT, MILDRED S. DRESSELHAUS, Depr. of Phys., MIT, DEPT. OF PHYS., TOHOKU UNIV. TEAM, MIT TEAM, UFMG TEAM — Raman intensity of RBM and G-band of single wall carbon nanotubes (SWNTs) is calculated as a function of excaition laser energy. Depending on type (mod(2n+m,3)=1 or 2 for (n,m) SWNT) of semiconducting SWNTs and on trigonal warping effect of metallic SWNTs, Raman excitation spectra show a variety of excitation spectra features. The physical origin of these specra can be understood by (1) strong k dependence of electron- phonon interaction, (2) interepherence effect between Raman processes and (3) broadening factor in the resonance processes. We comapred with the experimental results of Raman excitation profile with use of tunable laser, which is consistent with the theoretical prediction.

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