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Multisubband Boltzmann Carrier Transport in Carbon Nanotube Transistors GARY PENNINGTON, NEIL GOLDSMAN, AKIN AKTURK, University of Maryland, ALMA WICKENDEN, Army Research Laboratory — Theoretical predictions of multisubband Boltzmann carrier transport are compared with recent experimental characterization [1] of single-walled carbon nanotube field-effect transistors. Theory includes both intrasubband and intersubband deformation potential carrier-phonon scattering. Results compare well with measured device characteristics, accurately predicting performance as a function of temperature, gate voltage, and nanotube diameter. [1] X. Zhou, J. Y. Park, S. Huang, J. Liu, and P. L. McEuen, Phys. Rev. Lett. 95, 146805 (2005)

Gary Pennington

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