

Abstract Submitted
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Effects of Disorder on the Conductance of Semiconducting Carbon Nanotubes¹ D. ARESHKIN, George Washington University, C.T. WHITE, Naval Research Laboratory — The single parameter graphene sheet model for single-wall carbon nanotubes has been used to successfully explain many of their fundamental properties. However, even within this simple tight-binding approach calculations of nanotube conductance are typically restricted to the achiral armchair and zig-zag tubes because of the relatively small number of atoms in their translational unit cells. By taking advantage of helical symmetry we have overcome this limitation. This Green function based approach allows ready treatment of the effects of disorder on conductance without regard to the tube's chirality. Results for the effects of residual disorder on the conductance of a series of chiral semiconducting nanotubes will be presented.

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