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A Robust Model for Predicting Charge Mobility in a Random CNT Composite Sample JOSHUA BROWN, Louisiana Tech University, PEDRO DEROSA, Louisiana Tech University/Grambling State University — Experimental results have shown that Carbon Nanotube (CNT) concentrations have significant impact on the conductivities of CNT polymer composites. Two charge transport mechanisms have previously been observed in these composites: covalent hopping and tunneling. Using these mechanisms as a foundation a robust Monte Carlo simulation has been realized. The simulation first creates a CNT composite sample under different initial conditions such as concentration, tortuosity and length. The charge mobility of the sample is then predicted under an applied electric field for CNT concentrations below and above the percolation threshold.

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