# Abstract

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### Performance with Applications of a Near-Ballistic Limit Carbon Nano Transistor (CNT) Circuits

In this paper, we present a performance evaluation and comparison betweeen a short channel MOSFET and a carbon nanotransistors (CNT) operating near the limit of the ballistic transport. The carbon nanotube can be used in both device fabrication and circuit interconnects as a carbon nanowire (CNW). We provide a performance comparison of a cascode amplifier circuit using quasi-analytical circuit compatible model for the intrinsic ballistic CNFET. Analysis and simulation results show that the CNT is superior from the points of view of the gain and the power dissipation, and the superior transfer characteristics.