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## Electrical conductance in a single wall carbon nanotube (SWCNT): tight binding model

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### Abstract

In this study, we derive analytically Green's function (GF) formalism to calculate the electrical conductance for an armchair SWCNT in the ballistic regime. We obtain an exact analytical formula for the conductance of the SWCNT, in the tight-binding approach and assuming nearest-neighbor interaction by recursion process in the GF formalism. We show that in the presence of uniform external potential, the number of conductance channels and resonance energy range of the system decrease.

**Keywords:** Green's function, electrical conductance, armchair SWCNT, tight-binding model

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