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**Systematic Study on Quantum Confinement and Waveguide Effects for Elastic and Inelastic Currents in Atomic Gold Wire: Importance of the Phase Factor for Modeling Electrodes** HISAO NAKAMURA, KOICHI YAMASHITA, Univ. of Tokyo — Quantum confinement of the electrodes is an important issue for electron transport through molecular or atomic wire junctions. To assess the importance of waveguide effects by quantum confinement of the electrodes, we have calculated elastic and inelastic conductance and inelastic electron tunneling spectra of atomic gold wire with gold electrodes for several models. The results show the quite important role of the phase factors between the modeled electrodes and the contact region.

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