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Shot Noise and Full Counting Statistics from Non-equilibrium Plasmons in a Double Junction Quantum Wire JAEUK KIM, JARI KINARET, Department of Applied Physics, Chalmers University of Technology and Göteborg University, SE-41296 Gothenburg, Sweden, MAHN-SOO CHOI, Department of Physics, Korea University, Seoul 136-701, Korea — We consider a quantum wire double junction system with each wire segment described by a spinless Luttinger model, and study theoretically shot noise and full counting statistics. We find that the non-equilibrium plasmonic excitations in the central wire segment give rise to qualitatively different behavior compared to the case with equilibrium plasmons. In particular, shot noise is greatly enhanced by non-equilibrium plasmons, and exceeds the Poisson limit.

Jaeuk Kim
Department of Applied Physics, Chalmers University of Technology
and Göteborg University, SE-41296 Gothenburg

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