Abstract Submitted for the MAR13 Meeting of The American Physical Society

Squeezing in Photo-assisted Electron Quantum Shot Noise GABRIEL GASSE, BERTRAND REULET, CHRISTIAN LUPIEN, University of Sherbrooke — The current/voltage fluctuations generated by a conductor are another point of view of a randomly fluctuating electromagnetic field, i.e. "white" light. We demonstrate experimentally that this light is naturally squeezed, i.e. that the noise on one quadrature can go below the vacuum fluctuations, for a tunnel junction at very low temperature irradiated by a microwave. A classical current in a conductor generates a coherent state of light. We show that a quantum current can emit non-classical light.

> Gabriel Gasse University of Sherbrooke

Date submitted: 15 Mar 2013

Electronic form version 1.4