## Abstract Submitted for the MAR17 Meeting of The American Physical Society

Photon-assisted shot noise in graphene in the Terahertz range FRANCOIS PARMENTIER, LAURA SERKOVIC-LOLI, PREDEN ROULLEAU, CHRISTIAN GLATTLI, Service de Physique de l'Etat Condens, CEA Saclay, NANOELECTRONICS GROUP TEAM — When subjected to electromagnetic radiation, the fluctuation of the electronic current across a quantum conductor increases. This additional noise, called photon-assisted shot noise, arises from the generation and subsequent partition of electron-hole pairs in the conductor. The physics of photon-assisted shot noise has been thoroughly investigated at microwave frequencies up to 20 GHz, and its robustness suggests that it could be extended to the terahertz (THz) range. Here, we present measurements of the quantum shot noise generated in a graphene nanoribbon subjected to a THz radiation. Our results show signatures of photon-assisted shot noise, further demonstrating that hallmark time-dependant quantum transport phenomena can be transposed to the THz range. F.D. Parmentier et al., Phys. Rev. Lett. 116, 227401 (2016).

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