

Title: A Current Standard Using High-Frequency Single-Electron Pumps

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Abstract: I will report recent experiments I participated in at the Cavendish Laboratory, Cambridge University, using radio frequency sinusoidal signals to scoop up and transport N electrons over the pumping period. Here, $N=1, 2, 3$ or even four. Possible applications are to obtain a current standard, i.e., measuring the electron charge at high precision, quantum computation and a source of " N " photons. The error mechanisms will be discussed and peculiar effects in magnetic fields a million times stronger than that of the earth's magnetic field will also be presented.