



Electron diffraction with a detour to the Kapitza-Dirac effect

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Electron diffraction is considered a cornerstone problem in Quantum Theory, although no satisfactory physical explanation has yet been found for it. As is the case with the bouncing droplet system, this work explores one possible physical image using Stochastic Electrodynamics [1], with the aim of describing the dynamics of an electron embedded in the Zero Point Field and the wave surrounding it. Also, we take a little detour to the Kapitza-Dirac effect [2,3], in order to check the equations for the Lorentz force on the electron.

[1] L. de la Peña, A. M. Cetto and A. Valdés (2015), The Emerging Quantum. *Springer Verlag*, Ch. 9.

[2] Xiaofeng Li et al. (2004), Theory of the Kapitza-Dirac Diffraction Effect, *Phys. Rev. Lett.* **92**, 23.

[3] D. L. Freimund, K. Aflatoonian and H. Batelaan (2001), Observation of the Kapitza-Dirac effect, *Nature* **413**, 142-143.