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Problem: Simulation of Penning Trap (1 Electron)

Numerical Solving used: Euler’s Method

Formula proof:

Numerical part:

Timestep was chosen to be very small, to increase accuracy of Euler’s method. Solving took 20-30 minutes. Gravity is still in code but set to 0.

Trap Dimension: K. Blaum, Yu.N, G. Werth. (2009). Penning traps as a versatile tool for precise experiements in Fundamental physics. *Contemporary Physics.* Retrieved from <https://arxiv.org/ftp/arxiv/papers/0909/0909.1095.pdf> on 22/04/18.

An animation in .gif form and a matlab .fig are stored in the same folder as well.

Thank you