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A Perico* (aperico@ucsc.edu), 1156 High St, Santa Cruz, CA 95064. *Magnetic Billiard on Polygons: The Square case*. Preliminary report.

We consider a polygon in a two-dimensional plane with a homogeneous constant magnetic field orthogonal to such plane, but inside the polygon, the magnetic field is zero. We study the dynamics of an electron with an initial velocity in this setting. Problems arise because we have a boundary with corners. In the square case, we generalize velocities with a rational slope and show numerical evidence of a chaotic-like behaviour with other initial conditions. (Received September 17, 2019)