

1154-37-2022      **Sean Gasiorek\*** ([sean.gasiorek@sydney.edu.au](mailto:sean.gasiorek@sydney.edu.au)). *Inverse Magnetic Billiards: A Survey*.

Consider a strictly convex set  $\Omega$  in the plane, and a homogeneous, stationary magnetic field orthogonal to the plane whose strength is  $B$  on the complement of  $\Omega$  and 0 inside  $\Omega$ . The trajectories of a charged particle in this setting are straight lines concatenated with circular arcs of Larmor radius  $\mu$ . We examine the dynamics of such a particle and call this *inverse magnetic billiards*. Comparisons are made to standard Birkhoff billiards and magnetic billiards, as some theorems regarding inverse magnetic billiards are consistent with each of these billiard variants while others are not. (Received September 17, 2019)