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Sky K. Sjue*, Los Alamos National Laboratory, P.O. Box 1663, MS H846, Los Alamos, NM 87545. *The point spread function of a charged particle in a magnetic field: limits, interference phenomena and experimental demonstration.* Preliminary report.

The derivation of an analytic point spread function for a charged particle in a magnetic field will be given in a limit where the Larmor radius divided by the distance of the source from the detector vanishes. More general point spread functions will also be presented; interference phenomena arise when this limit does not hold. Methods will be given to estimate the magnitude of these interference phenomena for a given arrangement of source, detector and magnetic field. Data will be presented which exhibit the consequences of these interference phenomena on the point spread function. (Received February 10, 2014)