

SIMULATION OF THE SUPERPOSITION OF MAGNETIC FIELDS GENERATED BY SHORT SOLENOIDS IN A 2D ARRAY. R.J. Linton, D.T. Marx*, Illinois State University, Physics Department, Normal, IL, 61761, marx@phy.ilstu.edu.

Typically, undergraduate texts teach that magnetic fields outside of a long solenoid go to zero and it is not well understood how the magnetic fields produced by very short solenoids will combine in arrays. I investigated the superposition of magnetic fields generated by solenoids of lengths as small as 1 micron grouped in arrays on a plane. The simulations were done using custom software written in C++ and designed to produce animations of the magnetic fields.