Schwinger Pair Production of Magnetic Monopoles: LHC Searches and Theory Status

O Gould[1]

[1] *School of Physics and Astronomy, University of Nottingham, Nottingham, UK*
Contact Email: oliver.gould@nottingham.ac.uk

Electromagnetic duality implies that strong magnetic fields will produce magnetic monopoles by the dual Schwinger effect if, indeed, magnetic monopoles exist. As a consequence, strong magnetic fields provide perhaps the best avenue to search for magnetic monopoles: the existence of any given strong magnetic field provides a lower bound on their mass. This search strategy is currently being utilised at the LHC, where the strongest known magnetic fields are produced fleetingly by heavy-ion collisions. In these fields, calculations of the monopole production probability must go beyond the locally constant field approximation. I will discuss recent theoretical progress in carrying out this calculation, as well as open theoretical questions.