

Schwinger and Multi-Photon Electron-Positron Pair Production in Inhomogeneous Electromagnetic Fields

R ALKOEFER¹ AND C KOHLFÜRST²

¹*Institute of Physics, University of Graz, 5, Universitaetsplatz, Graz, Austria. Contact Phone: +433163808581*

²*Theoretical Physics, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

Contact Email: reinhard.alkofer@uni-graz.at

The Dirac-Heisenberg-Wigner formalism will be introduced with a special emphasis on its application to ultra-strong electromagnetic fields. Several examples for Schwinger and multi-photon electron-positron pair production in inhomogeneous electromagnetic fields and the related physical effects will be discussed.