The Schwinger Effect in Topologically Non-Trivial Fields *via* Non-Abelian Worldline Instantons

P Copinger[1]

[1] *High Energy Theory Group, Institute of Physics, Academia Sinica, 11529, Taipei, Taiwan*
Contact Email: pcopinger@gmail.com

Schwinger pair production is examined in non-Abelian topological fields for complex scalar particles in Euclidean spacetime. Both the SU(2) Belavin, Polyakov, Schwarz and Tyupkin (BPST) instanton and its complex SL(2,C) extension are treated using the worldline instanton method adopted for non-Abelian particles; this is achieved through the application of the coherent state method facilitating Wong's equations. Whereas the BPST instanton is found to be stable, predicting no pair production, it is shown its complex extension does indeed decay by the Schwinger effect [1].

References

[1] P Copinger and P Morales, Phys. Rev. D **103**, 036004 (2021)