

# Introduction to the worldline formalism of QFT

*Monday 9 January 2023 11:55 (25 minutes)*

This talk will provide an introduction to the first quantised “worldline approach” to quantum field theory. Here, physical information is encoded in path integrals over relativistic point particle trajectories. The path integrals typically lead to “Master Formulae” for scattering amplitudes that combine multiple Feynman diagrams.

I will review the historic development of the worldline formalism before presenting some of its recent successes, specifically in the context of non-perturbative gauge transformations and applied to QED in external background fields.

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**Session Classification:** Talks