

Les Houches - WE-Heraeus Workshop: Worldlines and path integrals in quantum field theory

22 March 2027 to 2 April 2027

Les Houches School of Physics

Scientific Programme

This Les Houches – WE-Heraeus workshop will be organised around 5 topics, to be covered by the various contributions and collaborative discussion sessions.

Wilhelm und Else Heraeus-Stiftung

Worldline foundations

Worldline foundations and theoretical developments in gauge theory and gravity

Quantum fields in external backgrounds

QFT in the presence of strong external background fields (e.g SFQED)

Heat kernels, resummation and resurgence

Heat kernel expansions, resummation of perturbative series and resurgence

On-shell path integrals

Calculation of wavefunctions or on-shell quantities in gauge theory – flat and curved space

Gravity and geometry in first quantisation

Gravity and geometry: from classical scattering to quantum anomalies