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Open problems in the mathematical definition of Feynman path integrals.

Since the '60s several efforts have been devoted to the rigorous mathematical definition of Feynman path integrals. Nevertheless nowadays several problems still remain open. In this talk I shall show some examples of simple physical system where the mathematical definition of Feynman path integrals presents ambiguities and amazingly requires the introduction of renormalization counterterms in the classical action functional. (Received September 04, 2019)