

# Observations on Unstable Quantons, Hyperplane Dependence and Quantum Fields

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## Abstract

There is persistent heterodoxy in the physics literature concerning the proper treatment of those quantons that are unstable against spontaneous decay. Following a brief litany of this heterodoxy, I develop some of the consequences of assuming that such quantons can exist, undecayed and isolated, at definite times and that their treatment can be carried out within a standard quantum theoretic state space. This assumption requires hyperplane dependence for the unstable quanton states and leads to clarification of some recent results concerning deviations from relativistic time dilation of decay lifetimes. In the course of the discussion I make some observations on the relationship of unstable quantons to quantum fields.

**Keywords:** decay theory, relativistic lifetime dilation, hyperplane dependence, quantum fields

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