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Theodore Jacobson: Lifetimes of near-eternal false vacua

Saturday, May 22, 2021 2:00 PM (50 minutes)

Abstract: We consider examples of extremely long lived false vacua which arise in theories with approximate or emergent (d-1)-form symmetries. In the limit that these symmetries are exact, decomposition of the theory into 'universes' implies that certain false vacua are exactly stable. We look at cases where the false vacua in question arise near symmetric points in parameter space where the (d-1)-form symmetry participates in a 't Hooft anomaly with an ordinary global symmetry. The effects of explicit symmetry-breaking deformations, which obstruct exact decomposition, are considered in a simple quantum mechanical model and in the Schwinger model.