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Topological Instanton for curved space particle creation and quantum reflections

Tuesday, 8 July 2025 15:00 (30 minutes)

Using the tanh potential as an example, we present a new class of real time instantons corresponding to general equivalence classes. The Euler-Lagrange equation solutions to saddle points are not unique for complex saddles: any contour in the equivalence classes maps to the same action due to Cauchy's theorem. This new tool resolves a number of existing puzzles, including curved space particle creation and reflection on a step potential.

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