DESY THEORY WORKSHOP
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**Nonperturbative QFT:
Methods and Applications**

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Resurgence and quantum field theory

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"Resurgent" semiclassical analysis, a systematic unification of perturbative and non-perturbative sectors, can be applied to resolve fundamental problems in quantum theories with degenerate minima. Expansions about different saddle points are quantitatively related to one another in a precise manner. Illustrations include double-well and periodic potentials in QM, and asymptotically free QFTs such as CPN and Yang-Mills, where this resurgent approach yields a new semiclassical interpretation of IR renormalons.

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