

Fabian Nolte: Time-Dependent van Hove-Miyatake Model

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The model's simplicity and exact solvability enable a detailed analysis of its dynamics. Its semiclassical nature provides heuristic insight into obstacles to convergence toward scattering states, with insights that extend to more complex models. The use of cutoffs and regularization procedures, originating in Nelson's model, leads to scattering amplitudes whose cutoff dependence becomes explicit. Our results expose challenges that approaches aiming to represent scattering states while avoiding cutoff procedures face.