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Asymptotic stability for the sine-Gordon kink under odd perturbations via super-symmetry

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Abstract

Kinks are examples of topological solitons in classical field theory. They have been studied for decades, mostly by methods of complete integrability such as the inverse scattering transform. One of the most basic models, known as phi^4, is not accessible to these techniques and much less is known even about the most basic object of nonzero charge: the kink in one spatial dimension. I will describe the recent asymptotic analysis with Jonas Luehrmann (TAMU) of the sine-Gordon evolution of odd data near the kink. While sine-Gordon is completely integrable, we do not rely on this property. The talk will present some background on classical fields and the history of the problem.

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Place: Zoom