

A Theory of Scattering Based on Free Fields

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Abstract

Although so far only quasifree fields have been shown to satisfy the Haag-Araki axioms for local algebras of observables in 3+1 dimensions, we show from a model in 1 + 1 dimensions that the free representation, which contains the state of two ingoing free particles, produces a pair of out-going solitons, provided that one chooses to observe this outcome. The state of the pair converges weakly, not strongly, as time goes to infinity, to a state in a new representation.