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Light-cone lattice from the universal R-matrix

Wednesday 26 September 2012 16:50 (20 minutes)

I will discuss a systematic approach to the construction of lattice regularizations of a certain class of 1+1 dimensional integrable quantum field theories.

The method is based on the identification of the relevant algebraic structure combined with a systematic analysis of its representations.

I will focus on the example of affine Toda theories.

Remarkable factorization/fusion properties of some degenerate representations of the underlying quantum affine algebra are connected to the separation/recombination of left- and right-movers in 1+1 dimensional conformal field theory.

I will present a derivation of the so called quantum discrete-time evolution equations on a light-cone lattice for affine Toda theories.

I will conclude with some considerations on the construction of Baxter's Q-operators for these models.

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