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Semiclassical form factors of composite branch-point twist operators in the sinh-Gordon model

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The 1+1-dimensional sinh-Gordon model is a well-known example of a simple and well-studied integrable QFT with factorized scattering. We consider this theory on a multi-sheeted Riemann surface with a flat metric and branch points, which are represented by twist operators $calT_n$. Twist operators are interesting in the context of von Neumann and Renyi entanglement entropies in the original model on the plane.

The calculation of correlation functions on such surfaces is an important problem, typically carried out by spectral decomposition in terms of form factors of local operators, i.e. their matrix elements in the basis of stationary states. In integrable models a complete set of solutions to a system of bootstrap equations can be identified with the form factors of a unique operator; however, this identification in terms of the basic field remains problematic.

In this talk I aim to discuss the technique for finding form factors of special composite operators located at the branch points, as well as their descendants, in the semiclassical approximation.

Authors: NESTUROV, Amir (University of Ljubljana); LASHKEVICH, Michael (Landau Institute for Theoretical Physics)

Presenter: NESTUROV, Amir (University of Ljubljana)

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