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On the relation between quantum KdV and the Sinh–Gordon theories

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Abstract

We construct and discuss a variant of quantum KdV theory which corresponds to central charge $c > 1$. The relations to Liouville theory and to the Sinh–Gordon model will be explained. We also clarify the relations to the models of Faddeev–Volkov, Faddeev–Kashaev–Volkov and Bazhanov–Mangazeev–Sergeev. Analyzing these relationships elucidates how the integrable structure of CFT with $c > 1$ is manifested in its massive deformation.