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Correlation functions of the open XXZ chain

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Abstract

We consider the open XXZ spin chain with diagonal boundary terms in the Algebraic Bethe Ansatz framework. We derive multiple integral representation for the correlation functions and we show that these representations can be used to compute the one and two point functions. In the free fermion point the integrals can be evaluated and the final results or the magnetization and the energy density confirm the conformal field theory predictions.