

Modified algebraic Bethe Ansatz for the XXX Heisenberg chain on the segment: towards scalar products

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The exact solution of the isotropic spin- $\frac{1}{2}$ Heisenberg chain on the segment is revisited. By means of the modified algebraic Bethe ansatz approach, the Bethe vector and its dual are constructed in different settings, corresponding to distinct forms of similar-transformed reflection matrices. This allow us to begin the study of scalar products for the model.