

Applications of algebraic Bethe ansatz matrix elements to spin chains

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Algebraic Bethe ansatz based techniques at finite size afford a way into computing observables for integrable models. Dynamical correlations of the Babujan–Tahktajan spin-1 chain are obtained by a higher spin generalisation of this method. The obtained real-space spin–spin correlation displays asymptotics fitting predictions from conformal field theory. Dealing with Bethe roots explicitly as deviated string-solutions is a decisive constituent of the method. Moreover, the explicit time evolution of out-of-equilibrium initial states for the anisotropic Heisenberg spin chain can be addressed as well.

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