

Exact solution of high spin Heisenberg model with generic integrable boundaries

Junpeng Cao

Institute of Physics, Chinese Academy of Sciences, Beijing
P.O.Box 603, Beijing
China
junpengcao@iphy.ac.cn

Joint work with: Wen-Li Yang, Kangjie Shi, Yupeng Wang

The off-diagonal Bethe ansatz method is generalized to the high spin integrable systems associated with the $su(2)$ algebra by employing the spin- s isotropic Heisenberg chain model with generic integrable boundaries as an example. With the fusion techniques, certain closed operator identities for constructing the functional $T-Q$ relations and the Bethe ansatz equations are derived. It is found that a variety of inhomogeneous $T-Q$ relations obeying the operator product identities can be constructed. Numerical results for two-site $s = 1$ case indicate that an arbitrary choice of the derived $T-Q$ relations is enough to give the complete spectrum of the transfer matrix.