

A Realization of Yangian and Its Applications to the Bi-spin System in an External Magnetic Field

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Abstract: Yangian $Y(\mathfrak{sl}(2))$ is realized in the bi-spin system coupled with a time-dependent external magnetic field. It is shown that $Y(\mathfrak{sl}(2))$ generators can describe the transitions between the "spin triplet" and the "spin singlet" that evolve with time. Furthermore, new transition operators between the states with Berry phase factor and those between the states of nuclear magnetic resonance are presented.

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Key words: Yangian, bi-spin system, transition operator

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