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Invited lecture - Session on Integrability

Correlation functions of the integrable $SU(n)$ spin chain

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We study the correlation functions of $SU(n) n > 2$ invariant spin chains in the thermodynamic limit. We formulate a consistent framework for the computation of short-range correlation functions via functional equations which hold even at finite temperature. We give the explicit solution for two- and three-site correlations for the $SU(3)$ case at zero temperature. The correlators do not seem to be of factorizable form. From the two-sites result we see that the correlation functions are given in terms of Hurwitz' zeta function, which differs from the $SU(2)$ case where the correlations are expressed in terms of Riemann's zeta function of odd arguments.

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