

SU(2) X SU(2) Gauging of Integrable XXX models

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XXX antiferromagnetic spin chains of arbitrary spin are considered in the presence of an external left-SU(2) gauge field. It is shown how to introduce a right-SU(2) gauge field as well. If either gauge field is trivial, the model is integrable and the spectrum may be found using Bethe's Ansatz. In this case, the string hypothesis implies that the gauge field has no effect on the excitation spectrum in the limit of infinite chain length. We discuss some implications for quantum field theories in 1+1 and 2+1 dimensions.