

EXTENDED STATE SPACE
OF THE RATIONAL $sl(2)$ GAUDIN MODEL
IN TERMS OF LAGUERRE POLYNOMIALS

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S u m m a r y

We consider the rational Gaudin model with non-zero magnetic field, which physically corresponds to the central spin problem. The space of states is described in terms of separated variables. The states of a spin system are given by rational (up to an exponential factor) functions of these variables on the Lagrangian submanifold. We build a representation of the $sl(2)$ algebra of the model in terms of Laguerre polynomials and formulate the functional Bethe ansatz using it.