

Séminaire de physique mathématique

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Orme des Merisiers Salle Claude Itzykson, Bât. 774

Rationalising Inozemtsev's elliptic spin chain

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In the world of elliptic integrability Inozemtsev's spin chain is quite a strange bird: this model of long-range-interacting electrons with elliptic interactions links the Heisenberg XXX spin chain, the Haldane-Shastry spin chain and the elliptic CSM model and is exactly solvable, but whether it is integrable remains an open question.

In its current form the solution of this elliptic spin chain looks complicated and does not promote further investigation. In an effort to change this, I will present a reparametrisation of this solution in the form of an extended Bethe ansatz that simplifies things considerably: most importantly, I will show that the M-particle energy can be written in (quasi-)additive form and the Bethe ansatz equations can be written in a familiar form. Moreover, written in the right variables the spectral problem becomes fully rational.
