Trigonometric $osp(1|2)$ Gaudin model

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Abstract

The problems connected with Gaudin models are reviewed by analyzing model related to the trigonometric $osp(1|2)$ classical $r$-matrix. Moreover, the eigenvectors of the trigonometric $osp(1|2)$ Gaudin hamiltonians are found using explicitly constructed creation operators. Commutation relations between the creation operators and the generators of the trigonometric loop superalgebra are calculated. The coordinate representation of the Bethe states is presented. The relation between the Bethe vectors and solutions to the Knizhnik–Zamolodchikov equation yields the norm of the eigenvectors. The generalized Knizhnik–Zamolodchikov system is discussed both in the rational and the trigonometric case.