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Modified algebraic Bethe ansatz

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We present a modified version of the algebraic Bethe ansatz (MABA) that allows to characterize the eigenvalues and the eigenstates of spins chains without $U(1)$ symmetry. In the case of the XXX Heisenberg spins chain on the circle with a twisted boundary condition, the Bethe vectors and associated eigenvalues will be constructed and the scalar product of these Bethe vectors will be calculated.

The talk is based on a series of results obtained in collaborations with A. Faribault, R. Pimenta, N. Slavnov, B. Vallet.

S. Belliard and R. Pimenta, *Slavnov and Gaudin formulas for models without $U(1)$ symmetry: the twisted XXX chain*, SIGMA **11** (2015) 099, arXiv:1506.06550
S. Belliard and N. A. Slavnov, *A note on $\mathfrak{gl}_2$ invariant Bethe vectors*, JHEP 31 (2018) arXiv:1802.07576
S. Belliard and A. Faribault, *Ground state solutions of inhomogeneous Bethe equations*, to appear in SciPost (2018), arXiv:1803.09666
S. Belliard, N. A. Slavnov and B. Vallet, *Modified algebraic Bethe anstaz: twisted XXX case*, to appear in SIGMA (2018), arXiv:1804.00597
S. Belliard, N. A. Slavnov and B. Vallet, *Scalar product of twisted XXX modified Bethe vectors*, submit to JHEP, arXiv:1805.11323