Algebraic Bethe Ansatz for spinor R-matrices

Reply to Referee 3

I thank the referee for carefully reading the manuscript and for their useful comments and suggestions. Below I list replies to the queries raised and list the changes I have made:

1. The deformation parameter of $U_{q^2}(\mathfrak{so}_{2n+1})$ is set to q^2 to avoid having $\sqrt{q}$ in the spinor-spinor R-matrix and the corresponding exchange relations. The square root of the deformation parameter arises because the root system of $\mathfrak{so}_{2n+1}$ has a short root. This explanation was added to the Introduction (page 2, line 45) and Section 2.5 (page 8, line 178).

2. It is indeed possible to obtain the vector-vector R-matrix by fusing spinor-vector R-matrices. However this construction is not needed for the goals of this paper, hence is not included.

3. – The q-transposition defined by (2.6–2.7) and all instances of it were renamed to a new symbol, $\mathfrak{w}$.

   – The ambiguous notation of the creation operators was fixed. The repeated symbol β was replaced by $\mathscr{b}$.

   – The notation below line 142 on page 6 is correct. Here $x_j^{m_j}$ with $m_j = 0, 1$ denote elements of the exterior algebra Λ defined in line 140. In particular, $x_j^0 = 1$ and $x_j^1 = x_j$.

   – The notation in equation (2.30) is correct. Here ω_i is an element of the deformed Clifford algebra $\mathscr{C}_q^n$.

4. – I have added an explanation of the product notation below line 110 on page 5.

   – The ambiguous notation $(\dot{a}\ddot{a})_n^j$ was replaced by a_n^j. An explanation of this notation was added at the beginning of Section 3.1 on page 18 and at the beginning of Section 4.1 on page 25.

   – The algebras $U_{q^2}(\mathfrak{so}_{2n+1})$ and $U_q(\mathfrak{so}_{2n})$ are explicitly mentioned in the Abstract. I have not included them in the title to avoid having mathematical symbols and thus help the search engines to index the paper.

Kind regards,
Vidas Regelskis