1154-81-903   **Chenliang Huang*** (`ch30@iupui.edu`), 402 N Blackford St., LD 270, Indianapolis, IN 46202, and **Evgeny Mukhin**, **Benoit Vicedo** and **Charles Young**. *The solutions of $\mathfrak{gl}(m|n)$ Bethe ansatz equation and rational pseudodifferential operators.*

We consider the $\mathfrak{gl}(m|n)$ Gaudin Bethe ansatz equation associated to a weight in a tensor product of polynomial modules. To a solution of $\mathfrak{gl}(m|n)$ Gaudin Bethe ansatz equation, we associate a rational pseudodifferential operator. The rational pseudodifferential operator is invariant under the reproduction procedure. We expect that the coefficients of the expansion of the rational pseudodifferential operator are eigenvalues of the higher Gaudin Hamiltonians acting on the corresponding Bethe vector. (Received September 17, 2019)