SEMPARIS – Séminaires en région parisienne

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Journal Club

Vendredi 20 Octobre 2017, 14 :15
IPHT, Salle Claude Itzykson, Bât. 774
Domaines : physics

Titre : *New Construction of Eigenstates and Separation of Variables for SU(N)*

Orateur : **Fedor Levkovich-Maslyuk (ENS - Paris)**

Résumé : *"Integrability meeting ENS/IPhT"*

(Based on arXiv :1610.08032)
We present a new way to construct eigenstates of integrable XXX quantum spin chains with SU(N) symmetry which bypasses the nesting procedure. The states are built by repeatedly acting on the vacuum with a single operator Bgood(u) evaluated at the Bethe roots. Our proposal serves as a compact alternative to the usual nested algebraic Bethe ansatz. Furthermore, the roots of this operator give the separated variables of the model, explicitly generalizing Sklyanin's approach to the SU (N) case. We present many tests of the conjecture and prove it in several special cases. We focus on rational spin chains with fundamental representation at each site, but expect that our main results are valid more generally.

(IPhT organizer : Ivan Kostov)