

# SEMPARIS – Séminaires en région parisienne

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## Séminaire Darboux - physique théorique et mathématiques

**Jeudi 18 Janvier 2018, 11 :00**

LPTHE, bibliothèque

Domaines : hep-th—math—math.MP

Titre : *Spectra of quantum integrable systems, Langlands duality and category  $\mathcal{O}$*

Orateur : **David Hernandez ( IMJ-PRG )**

Résumé : *The spectrum of a quantum integrable system is crucial to understand its properties.  $R$ -matrices give powerful tools to study such spectra. A better understanding of transfer-matrices obtained from  $R$ -matrices led to the proof of several results for the corresponding quantum integrable systems. In particular, their spectra can be described in terms of "Baxter polynomials". They appear naturally in the study of a category  $\mathcal{O}$  of representation of a Borel subalgebra of a quantum affine algebra. Remarkable relations in the Grothendieck ring of this category  $\mathcal{O}$  can be established, from which one can derive the Bethe Ansatz equations between the roots of the Baxter polynomials. Based on joint works with M. Jimbo, E. Frenkel and B. Leclerc.*

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