

Cours de physique théorique de Saclay

Vendredi 08/09/2023, 10:00-12:00

Orme des Merisiers Salle Claude Itzykson, Bât. 774

Introduction to quantum integrability

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IPhT

This course will give a pedagogical introduction to (quantum) integrability, a topic in mathematical physics with applications ranging from experiments in condensed-matter physics to high-energy theory. The aim is to show some highlights of the field, with a glimpse of the underlying algebraic structures, while keeping technicalities to a minimum. The provisional plan of the course is as follows; details can be adjusted to suit the audience.

Part I will cover the (standard) basics of integrability, more or less following my lecture notes [arXiv:1501.06805](https://arxiv.org/abs/1501.06805):

the Heisenberg spin chain, the six-vertex model, the exact characterisation of their spectrum by Bethe ansatz, an application to alternating-sign matrices (ASM). Part II is about the (less standard) basics of long-range integrability:

the Haldane–Shastry spin chain, the quantum Calogero–Sutherland system, the exact and explicit characterisation of their spectrum.

Pour toute information, contacter ipht-lectures@cea.fr