



SC

PHYS2221 Questions spéciales de physique mathématique II

[22.5h] 4 credits

This course is taught in the 2nd semester

Teacher(s): Jean-Pierre Antoine
Language: french
Level: 2nd cycle course

Aims

Further training in field theory, both classical and quantum. In certain cases, support for a master thesis.

Main themes

The contents can vary from year to year, depending on the interests of the audience. The following subjects have been covered during the last few years:

1. Complements of quantum field theory: renormalization problems; infrared problem; dimensional regularization; rigorous approaches
2. Nonlinear differential equations: general properties, solitons; conservation laws; Bäcklund transformations; inverse scattering methods, Lax pairs; sigma models and the ZMS method
3. Coherent states and applications: Canonical coherent states; generalizations; wavelets.

Other credits in programs

PHYS22/G Deuxième licence en sciences physiques (4 credits)