



FSI3270 Quantum Phase Transitions 7.5 credits

Kvantfasövergångar

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for FSI3270 valid from Autumn 2011

Grading scale

Education cycle

Third cycle

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The PhD student shall after the course:

- Get a broad overview and a deep understanding of quantum phase transitions and their characteristics.

- Be able to use the knowledge in practical applications.

Course contents

This course is about quantum phase transitions and quantum critical phenomena in a variety of different systems and models. It covers, e.g., the characteristic scaling behaviour at continuous quantum phase transitions, and applications to superconductors, cold atoms, spin systems, etc.

Course literature

- S. Sachdev, Quantum phase transitions (Cambridge Univers. Press, 2001)
- Miscellaneous articles.

The detailed course literature is planned individually with the examiner.

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

The course is completed by reading suitable literature and doing a set of homework exercises. There is either a written or an oral examination.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.