Selected Topics of Theoretical Solid State Physics

Module coordinator: Managing Director of the Institute of Theoretical Physics and Astrophysics
Module offered by: Faculty of Physics and Astronomy

ECTS: 6
Method of grading: numerical grade
Only after succ. compl. of module(s)

Duration: 1 semester
Module level: graduate
Other prerequisites: --

Contents:
In this lecture, selected topics of condensed matter theory are addressed. We intend to present new developments to bring the students in touch with actual research topics. Possible subjects are many-body localization and dynamic quantum matter.

Intended learning outcomes:
The students learn how to describe condensed matter systems in presence of disorder and interactions from a theoretical point of view. This happens on the basis of analytical and numerical methods. Therefore, we envisage a smooth crossover of these students to the next step of becoming a researcher.

Courses:
V (3) + R (1)
Module taught in: German or English

Method of assessment:
written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes).
If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.
Language of assessment: German and/or English
Assessment offered: In the semester in which the course is offered and in the subsequent semester