



LECTURE COURSE IN THE QUANTUM UNIVERSE RESEARCH SCHOOL

Summer Term 2024

Gravitationswellendetektion (Gravitational-wave detection)

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Course Description:

The course provides an introduction to gravitational waves (GWs) and its sources but focusses on GW detection via laser interferometric detection concepts and technologies. Major focus is on ground-based detectors like LIGO and the Einstein Telescope, but also space-based detection with LISA is covered. Core principles and their realisation, like force-free test masses and ultra-low-noise displacement measurements are introduced in the context of current and future detector developments.

There are 2x 90min lectures per week (4SWS). The first half of the lecture is in German, the 2nd half might be in English, depending on the demand. On top there is an exercises in German or English (2SWS).

The lectures take place every Tuesday and Wednesday from 13:00 to 14:30. Exercise classes are 1x 90min per week and take place on Wednesdays from 14:30 to 16:00. You need to be able to follow the lectures in German. You can ask questions in English during lectures and exercises.

Prerequisites:

You should have some knowledge about mechanical oscillators as well as coherent laser optics.

Date and Place: Tue, 13:00–14:30, SR 052, Building 69, Bahrenfeld
Wed, 13:00–14:30, SR 052, Building 69, Bahrenfeld

Problem Classes: Wed, 14:30–16:00, SR 052, Building 69, Bahrenfeld

Starting on: 2 April, 2024
