



## LECTURE COURSE IN THE QUANTUM UNIVERSE RESEARCH SCHOOL

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Summer Term 2021

# Gravitationswellendetektion (Gravitational Wave Detection)

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### Course Description:

The course focuses on gravitational wave detection via laser interferometry and introduces all relevant astrophysical sources, detection concepts, projects 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 (4 SWS). All lectures are in German. The course is online, partly as videos (Lecture2Go). On top there are exercises in German and English (2 SWS).

### Prerequisites:

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

**Date and Place:** Mon 10:45–12:15, Thu 10:45–12:15, Moodle  
Please subscribe to the lecture at  
<https://lernen.min.uni-hamburg.de/course/view.php?id=1185>  
using the password GWD2021.

**Problem Classes:** Thu 13:15–14:45 (German), Thu 15:00–16:30 (English)

**Starting on:** 8 April 2021

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