

## Announcement

# Seminar Magnetic Resonance

Prof. Jelezko, Dr. Blinder, Dr. Speidel

## Description

This seminar introduce the field of nuclear and electron magnetic resonance with its current applications in quantum sensors, spectroscopy, medicine and quantum computing.

## Topics

- Principles of Nuclear Magnetic Resonance
- Zero and Ultra-Low Field NMR
- Principles of Magnetic Resonance Imaging
- Metabolic and Hyperpolarized MRI
- Nanoscale NMR
- Spin qubits, Quantum Computation based on Magnetic Resonance
- Electron Paramagnetic Resonance / EPR for the Study of Biological Systems

## Prerequisites

Fundamental knowledge of electro magnetism and quantum mechanics

## Literature

Depending on the topic, textbook chapters, review and research articles

## Additional Information

The module refers to bachelor and master students

Seminar: 3 ECTS

Advanced Seminar: 4 ECTS

## Lecturers

Prof. Fedor Jelezko, Dr. Remi Blinder, Institute of Quantum Optics; Dr. Tobias Speidel, Experimental Cardiovascular Imaging (ExCaVI), Ulm University Hospital

