

Invitation to the Oral Examination – Department EE

For the occasion of her examination for a Doctoral Degree,

Mrs. Katarina Boos

will present her dissertation on

Coherent Interaction of Pulsed Light with a Single Quantum Two-Level System

on **17.01.2025** at **11.30 a.m.**

Attendance to the presentation is open to the public. The presentation will be in **English**.

The candidate, all members of the Examination Committee, and authorized examiners of the TUM School of CIT are invited to the presentation and subsequent oral examination.

The presentation and subsequent examination will take place online via [Zoom]:

Link: [https://tum-conf-zoom-x.de/j/67550163498?pwd=psJLhLhHQ43RjqbL0DDnjdJLtFC9W9.1](https://tum-conf.zoom-x.de/j/67550163498?pwd=psJLhLhHQ43RjqbL0DDnjdJLtFC9W9.1)

Meeting-ID: 675 5016 3498

Code: 597128

and in room **5901.01.013, Hans-Piloty-Str. 1, Garching**

Examination committee:

Chair: **Prof. Dr.-Ing. Christian Jirauschek**

First Examiner: **Prof. Dr. rer. nat. Kai Müller**

Second Examiner: **Prof. Ph.D. Jonathan J. Finley**

Third Examiner: **Dr. Carlos Antón-Solanas**

Garching, the **8** of **January 2025**

Mailing list:

Members of the examination committee

Doctoral candidate

CIT staff

Abstract:

In this work, I contribute to current research in photonic quantum technology by investigating dressed states of a two-level system, in form of a semiconductor quantum dot, interacting with short Gaussian pulses, and their photon emission. Furthermore, I study the recently proposed and in a proof-of-principle experiment demonstrated swing-up excitation technique in detail which promises to solve challenges currently existing for established excitation techniques.