



universität
uulm

Physikalisches Kolloquium
Einladung

Physics Colloquium
Invitation

Monday, 13 July 2026

Lecture Hall N24/H13, at 16:15

Coffee and cookies will be served in front of the lecture hall from 16:00

Tuning and Exploring Quantum Light-Matter Interactions in Two-Dimensional Materials

Prof. Weibo Gao

Nanyang Technological University, Singapore



<https://dr.ntu.edu.sg/cris/rp/rp01089>



Two-dimensional materials have emerged as a powerful platform for exploring fundamental quantum physics and developing next-generation quantum technologies. In this talk, I will present our group's recent research progress in tuning light-matter interactions in low-dimensional quantum systems. The presentation will cover several key breakthroughs, including the generation of two-dimensional quantum entangled photons, the detection of chiral light, and the exploration of novel topological optical phenomena such as the optical switching effect in moiré Chern ferromagnets. By leveraging the unique valley degrees of freedom, spin, and topological properties of these two-dimensional materials, our research aims to pave the way for robust quantum information processing, advanced quantum light sources, and integrated quantum photonics.