

Fakultät 1  
Institut für Physik

## ***Invitation to Physics Colloquium***

Lecturer:

***M.Sc. & M.Eng. Francesco Villasmunta  
Technische Hochschule Wildau***

Topic:

***"Optical through-Silicon Waveguides for Chip-to-Chip  
Interconnections"***

Optical through-Silicon Waveguides (OTSW) address the increasing demand for faster, energy-efficient chip-to-chip communication in 3D architectures. By replacing traditional metallic interconnections with vertical silicon photonic waveguides, there's the potential for a significant improvement in data transmission speeds, while drastically reducing energy consumption. Utilizing established CMOS-compatible deep reactive ion etching techniques, the newly developed OTSWs enable robust, low-loss optical interconnects (with less than 3 dB losses) across stacked chips, offering a scalable solution for next-generation computing systems

**Date:** Thursday, 17.07.2025

**Time:** 03:30 p.m.

**Location:** ZHG, room SR1

*Im Auftrag von Prof. Flege - Stefanie Jannasch*

*FG Angewandte Physik und Halbleiterspektroskopie*

*Prof. Dr. rer. nat. habil. Jan Ingo Flege*

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