

## PHYSIKALISCHES KOLLOQUIUM

### Wintersemester 2022/23

Das Kolloquium findet (soweit nicht anders angegeben) **jeweils montags um 17:15 Uhr in Präsenz im Röntgen-Hörsaal des Physikalischen Instituts, Hubland Campus Süd, Universität Würzburg und online via Zoom statt.**

Link zum Zoom-Raum:

<https://go.uniwue.de/physkolloqzoom>



**17.10.2022**

#### **Vorstellungsvortrag im Rahmen des Habilitationsverfahren**

Dr. Viktoriia Kornich

Universität Würzburg, Lehrstuhl für Theoretische Physik IV

#### **Unconventional and driven superconductivity and superconducting devices**

##### **Abstract**

Exotic materials, topological states, and quantum collective phenomena are of high interest for fundamental science and technology, because they provide complex and stable performance even at a very small scale. The field of unconventional superconductivity investigates new features and phenomena occurring in superconducting materials and setups. However, the exact processes, which lead to unconventional superconducting states are usually not clear and subject to numerous hypotheses and attempts to experimentally verify them. In this talk, I will discuss how to use externally applied acoustic waves in order to induce unconventional superconducting pairing of different types in solid state matter, primarily in thin films and 2D materials. I will consider a non-equilibrium PT-symmetric superconducting state in frames of non-Hermitian formalism and show the striking difference of the Andreev bound states formed in a junction with PT-symmetric non-Hermitian superconductor comparably to the ones obtained in conventional junctions. I will discuss how to detect such non-Hermitian superconductivity and odd-frequency superconductivity via

angle-resolved photoelectron fluctuation spectroscopy. Finally, I will consider Andreev molecule based on two closely-placed Josephson junctions and outline its characteristic properties.

Für die Dozentinnen bzw. Dozenten der Fakultät

PD. Dr. Meyer, Prof. Dr. Assaad, Dr. Feichtner und Hr. Kögel