

## PhD-Symposium Floquet Physics (SYPS)

organized by Working Group young DPG (AKjDPG)

supported by all divisions of the section AMOP

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The quest for enhanced control over complex systems and for new intriguing phases of matter has attracted a lot of attention to the tool of Floquet engineering. By modulating a given system periodically in time, one can modify and control its inherent physical properties. The application of Floquet formalism makes it possible to describe these out-of-equilibrium phenomena with an effective theory on time scales longer than the drive. The resulting physics spans from renormalizing static parameters to creating new processes that are difficult or even impossible to achieve in static systems. Since the method only relies on a time-periodic parameter in the system, it is possible to implement Floquet engineering on many different experimental platforms. This broad appeal led to successful realizations in different fields like condensed matter, classical physics, cold atoms, photonics or trapped ions. The validity of effective Hamiltonians and their experimental verification in the case of strongly correlated many-body states is one of the current topics in the field.

The aim of this symposium organized by young researchers is to give a motivating taste of theoretical and experimental advances in the various topics investigated with Floquet physics.

The symposium is especially designed for young PhD students as well as MSc students as an inspiration for their future work.

## Overview of Invited Talks and Sessions

(Lecture room RW HS)

### Invited Talks

SYPS 1.1	Mon	14:00–14:30	RW HS	<b>Floquet engineering of interacting quantum gases in optical lattices</b> — ●ANDRÉ ECKARDT
SYPS 1.2	Mon	14:30–15:00	RW HS	<b>Experiments on driven quantum gas and surprises</b> — ●CHENG CHIN
SYPS 1.3	Mon	15:00–15:30	RW HS	<b>Exploring 4D Quantum Hall Physics with a 2D Topological Pumps</b> — ●ODED ZILBERBERG, MICHAEL LOHSE, CHRISTIAN SCHWEIZER, IMMANUEL BLOCH, HANNAH PRICE, YAACOV KRAUS, SHENG HUANG, MOHAN WANG, KEVIN CHEN, JONATHAN GUGLIELMON, MIKAEL RECHTSMAN
SYPS 1.4	Mon	15:30–16:00	RW HS	<b>Floquet Discrete Time Crystals in a Trapped-Ion Quantum Simulator</b> — ●GUIDO PAGANO, JIEHANG ZHANG, PAUL HESS, ANTONIS KYPRIANIDIS, PATRICK BECKER, JACOB SMITH, AARON LEE, NORMAN YAO, TOBIAS GRASS, ALESSIO CELI, MACIEJ LEWENSTEIN, CHRISTOPHER MONROE

### Sessions

SYPS 1.1–1.4	Mon	14:00–16:00	RW HS	<b>PhD-Symposium: Floquet Physics - how time-periodic systems can make a difference</b>
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