

### Scientific Chairs:

Professor Dr. Holger Fehske (Greifswald)  
Professor Dr. Alexander Szameit (Rostock)

### Information:

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### Registration:

[wiko-greifswald.de/anmeldung](http://wiko-greifswald.de/anmeldung)

In the context of photonics, topology has emerged as a new fundamental paradigm for controlling the flow of light. As such, it holds great promise for a wide range of advanced applications, which already begin to manifest themselves in the recent realizations of topological transport in photonic Floquet insulators.

This International Conference aims at exploring the interdisciplinary synergy emerging at the interface between topology and photonics. A series of tutorial lectures and topical research presentations will review the current state of topological photonics and introduce promising future research avenues. In this way, the International Conference will provide a platform for the intensive exchange between young researchers and established scientists.



Alfried Krupp Wissenschaftskolleg  
Greifswald

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# From Topology to Photonics and beyond

The International Conference is funded by the Alfried Krupp von Bohlen und Halbach-Stiftung, Essen.

The Alfried Krupp Wissenschaftskolleg is an academically independent institution sponsored by the Stiftung Alfried Krupp Kolleg.

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International Conference  
17th – 19th June 2019

## Sunday, 16<sup>th</sup> June 2019

5.00 pm – 7.00 pm

Registration at the Alfried Krupp Institute for Advanced Study

## Monday, 17<sup>th</sup> June 2019

9.15 am – 9.30 am

Opening and welcome addresses by the academic coordinator of the Alfried Krupp Institute for Advanced Study and the Scientific Chairs of the International Conference

9.30 am – 10.30 am

Topological photonics in integrated waveguide structures

Matthias Heinrich (Rostock)

10.30 am – 11.00 am

Coffee Break

11.00 am – 12.30 pm

Nonabelian artificial gauge fields and PT-symmetric quantum optics

Stefan Scheel (Rostock)

On the dynamics of non-ideal PT-symmetric exceptional point systems

Christian Wolff (Odense)

An universal Floquet protocol for Hermitian and non-Hermitian topological phases

Bastian Höckendorf (Greifswald)

12.30 pm – 2.00 pm

Lunch Break

2.00 pm – 3.30 pm

The adiabatic principle and Berry's geometric phase for Floquet systems

Martin Holthaus (Oldenburg)

Bulk-edge correspondence for equatorial waves

Clément Tauber (Zürich)

3.30 pm – 4.00 pm

Coffee Break

4.00 pm – 5.00 pm

Floquet engineering of symmetry broken phases

Netanel Lindner (Haifa)

6.00 pm – 7.30 pm

Öffentlicher Abendvortrag

Der optische Quantencomputer – Rechnen mit Licht

Alexander Szameit (Rostock)

Moderation: Holger Fehske (Greifswald)

## Tuesday, 18<sup>th</sup> June 2019

9.00 am – 10.30 am

Synthetic topological matter

Ronny Thomale (Würzburg)

Exciton-polariton topological insulator

Sven Höfling (Würzburg)

10.30 am – 11.00 am

Coffee Break

11.00 am – 12.30 pm

Computational photonics and topological materials

Alexander Quandt (Johannesburg)

High-harmonic generation in laser-driven topological condensed matter

Dieter Bauer (Rostock)

12.30 pm – 2.00 pm

Lunch Break

2.00 pm – 3.30 pm

Dimensional reduction, topological pumps, and topological quasicrystals

Oded Zilberberg (Zürich)

Topological protection and time-periodic driving in model systems

Georg von Freymann (Kaiserslautern)

3.30 pm – 4.00 pm

Coffee Break

4.00 pm – 5.30 pm

Linear and nonlinear Aharonov-Bohm caging

Marco Di Liberto (Brüssel)

Topology and localization in a polaritonic generalized Harper-Fibonacci model

Antonio Štrkalj (Zürich)

Experimental demonstration of a photonic topological Z<sub>2</sub> insulator

Lukas Maczewsky (Rostock)

## Wednesday, 19<sup>th</sup> June 2019

9.00 am – 10.30 am

Band structure engineering in periodic circuit networks

Tobias Helbig (Würzburg)

Electric circuits as hosts of topological boundary modes

Tobias Hofmann (Würzburg)

Investigation of non-linear and topological Hamiltonians in photonic waveguide systems

Chad Pelwan (Johannesburg)

Interface states engineering between anomalous Floquet topological insulators

Francesco Piccioli (Trento)

10.30 am – 11.00 am

Coffee Break

11.00 am – 12.30 pm

Topological effects in optical fiber loop systems

Sebastian Weidemann (Rostock)

Optimal design strategy for non-Abelian geometric phases in photonics based on quantum metric

Mark Kremer (Rostock)

High harmonic generation of topological graphene systems

Christoph Jürß (Rostock)

(Non-)Hermitian topological phases in Floquet graphene

Alexander Fritzsche (Greifswald)

12.30 pm – 12.45 pm

Summary and closing

Scientific Chairs of the International Conference