

## Theoriekolloquium

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Am **1. Dezember 2016** um **14.15 Uhr** in **W2 1-143** hält

**Herr Dr. Takashi Oka (Dresden)**

einen Vortrag mit dem Titel

### **Control of topology in periodically driven quantum systems**

Topology is a key concept in modern physics giving us universal understandings to phenomena discovered in different branches, for example the quantum Hall effect in solid state and quantum anomaly in high energy physics. It was predicted that the topology of non-interacting fermions can be changed and controlled by application of periodic driving. In particular, a theoretical proposal was made in two dimensional Dirac systems where an application of circularly polarized light was shown to turn the system into a quantum Hall state. One can see this as a dynamical realization of a Chern insulator, or to be more precise, the celebrated Haldane model of quantum Hall state without Landau levels. This effect can be understood with the help of the Floquet theory, where the circularly polarized laser plays the role similar to the “next nearest hopping with a nontrivial phase factor” in the Haldane model. I will also briefly report my collaboration with string theorists where we try to build a “Holographic Floquet state” that realizes a strongly correlated version of the Floquet Weyl semimetal.

Interessierte sind herzlich eingeladen.

gez. Prof. Dr. Martin Holthaus