



# ***EINLADUNG***

im Rahmen Literaturseminars

zum Vortrag

von

**Thomas Mieling**

(Universität Wien)

über

***„Polarization transport in optical fibers beyond Rytov’s law“***

## **Abstract:**

Within geometrical optics, Rytov’s law states that the polarization vector is Fermi–Walker transported along light rays.

A transport law of this kind was experimentally observed in optical fibers – a regime in which ray optics does not suffice, but wave optics is required. In this talk, I will present a perturbative solution to the full Maxwell equations in arbitrarily bent fibers, under the sole assumption that the fiber’s radius of curvature is much larger than its diameter.

At leading order, this provides a rigorous derivation of Rytov’s law. At next order, one obtains non-trivial dynamics of the electromagnetic phase and polarization.

We discuss potential experiments signatures of of these corrections and compare with similar results on this subject. This is joint work with Marius Oancea.

arXiv:2302.10540 [physics.optics]

**Zeit:** Donnerstag, 30.03.2023, 15.30 h

**Ort:** Seminarraum A, Währinger Straße 17, 2nd floor

gez.: P. Chrusciel, D. Fajman