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EINLADUNG zum IFP-SEMINAR

Microwave engineering explains MIRO polarization immunity problem

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Host: Andrei Pimenov

Termin: Mittwoch, 17. Februar 2021, 16 Uhr CET

Ort: Via ZOOM,

<https://tuwien.zoom.us/j/93044890183?pwd=S1NaeS9CazRGRFlhWnoxRHVwME5PZz09>

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Abstract:

The common approach to scientific talks is to focus on the underlying physics. Contrary, I will try to keep the amount of physics in my talk as low as possible. It might be interesting to a broader community, how little intrinsic physics is important, and how many extrinsic electrodynamics together with general symmetry considerations are crucial to answer some particular seemingly physical problem.

MIRO stands for Microwave Induced Resistivity Oscillations. It is typically observed in a high-mobility 2-dimensional systems, for example GaAs-based quantum wells. MIRO is a nonlinear effect when resistivity in magnetic fields changes upon illumination with the microwave or terahertz radiation. Almost all measurements up to date have demonstrated that the changes are symmetric in magnetic field, even when the linear response is highly asymmetric. This has puzzled the scientific community and stimulated the development of various theories to explain this effect. The recent findings in our group have shown that the effect can be highly asymmetric at certain conditions as well.