

## LightTrans' talks at SPIE Photonics West 2019

# Physical-optics modeling of diffractive/meta lens and their design

**SPIE LASE – Session 10: Emerging Laser Components**

6 February 2019 | 17:10 – 17:30

Liangxin Yang, Site Zhang, Christian Hellmann, and Frank Wyrowski

Diffractive lenses, as well as the meta-lenses which have recently started to draw attention, are of importance in different optical applications. We propose a fast-physical-optics approach for the modeling and design of such components. A diffractive or meta-lens can be modeled as local structures (e.g. local gratings) on a base interface. The rigorous Fourier modal method (FMM) is applied for the local micro-/nanostructures; then the phase modulations at each position can be collected to model the lens function. The design of diffractive/meta-lenses follows an inverse concept – starting with a functional description of the whole lens, and then searching for suitable local structures.