

# THEODORE MAIMAN SEMINARS on physics 2018

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## Light matter interaction at the level of one and no atom

**Prof. Dr. Gerd Leuchs**

(Max Planck Institute for the science of light)

**7<sup>th</sup> of February 2019**

11:30 h, Lecture Hall of Max Planck Institute of Quantum Optics

<https://www.attoworld.de/>

<http://www2.mpg.de/APS/>

<https://www.en.physik.uni-muenchen.de/>

In this talk, the exotic story of light matter interaction at the level of one and even no atom is discussed. A single atom in free space can have significant effects on a single light beam producing e.g. sizeable phase shifts. Regarding the dynamics, a future goal is demonstrating time reversibility of spontaneous emission. But also without any atom, when studying empty space, there are intriguing concepts and future opportunities.