

# THEODORE MAIMAN SEMINARS on physics 2019

IMPRS **APS**



## Cosmology in the laboratory

**Prof. Ulf Leonhardt**

Weizmann Institute of Science, Israel

**2<sup>nd</sup> of May 2019**

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

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

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

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

Stephen Hawking predicted that black holes are not black, but radiate due to the quantum physics of the vacuum. Fulling, Davies and Unruh predicted that an accelerated observer perceives the quantum vacuum as thermal radiation. Both effects draw tantalizing connections between general relativity, quantum mechanics and thermodynamics, and both effects have never been observed yet. The lecture shows how laboratory analogues of the event horizon and of relativistic acceleration can, literally, shed light on such and similar phenomena.