

Physikalisches Kolloquium



Thursday, 10.11.2022, 16:15, HS 100

In presence

Prof. Dr. Peter Baum, Universität Konstanz:

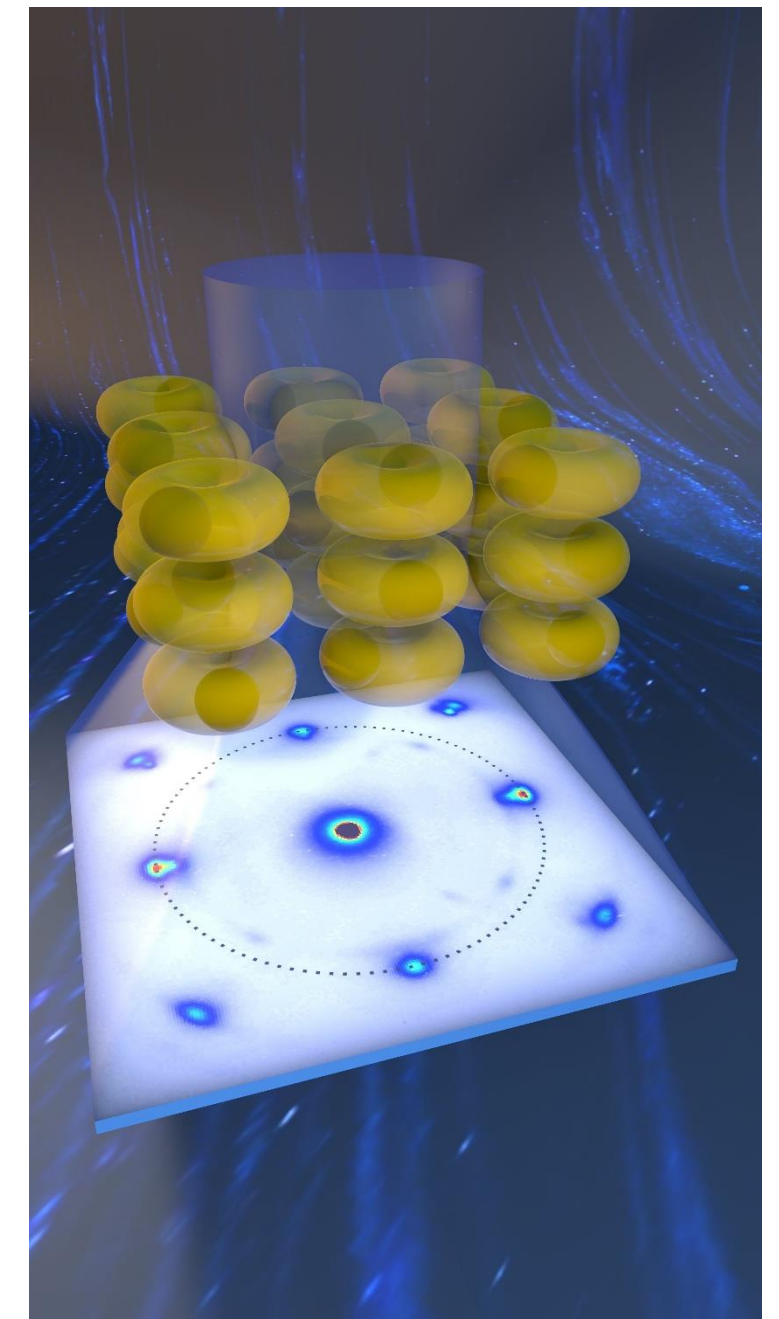
Seeing Atoms and Electrons in Space and Time

Abstract

The fundamental reason behind almost any light-matter interaction are atomic and electronic motion in space and time. In order to provide a movie-like access to such dynamics, we unify electron microscopy with attosecond and femtosecond laser technology. In this way, we combine the awesome spatial resolution of modern electron beams with the spectacular time resolution that is offered by the cycle period of light [1]. Selected results will be reported on the electric fields within metamaterials [2-3], the Einstein-de-Haas effect on atomic dimensions [4], the reaction path of phase transitions [5] and the formation of free-electron qubit states [6]. Many breakthroughs in science and technology have been achieved by disruptive imaging techniques, and our 4D electron microscopy may play this role for light-matter interaction on atomic dimensions.

References

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All of you interested in physics are cordially invited!

Contact: Dr. Arne Senftleben, Experimental Physics III, More Information: uni-kassel.de/go/physikalisches_kolloquium