Carl von Ossietzky
Universität
Oldenburg

Institut für Physik

Physical Colloquium

„Attosecond pulses of light for the study of electron dynamics“

Prof. Dr. Anne L‘Huillier
2023 Nobel Prize in Physics
Lund University, Department of Physics

Friday, 13.12.2024, 12.15 p.m.

Get together with Q&A from 11.30 a.m.

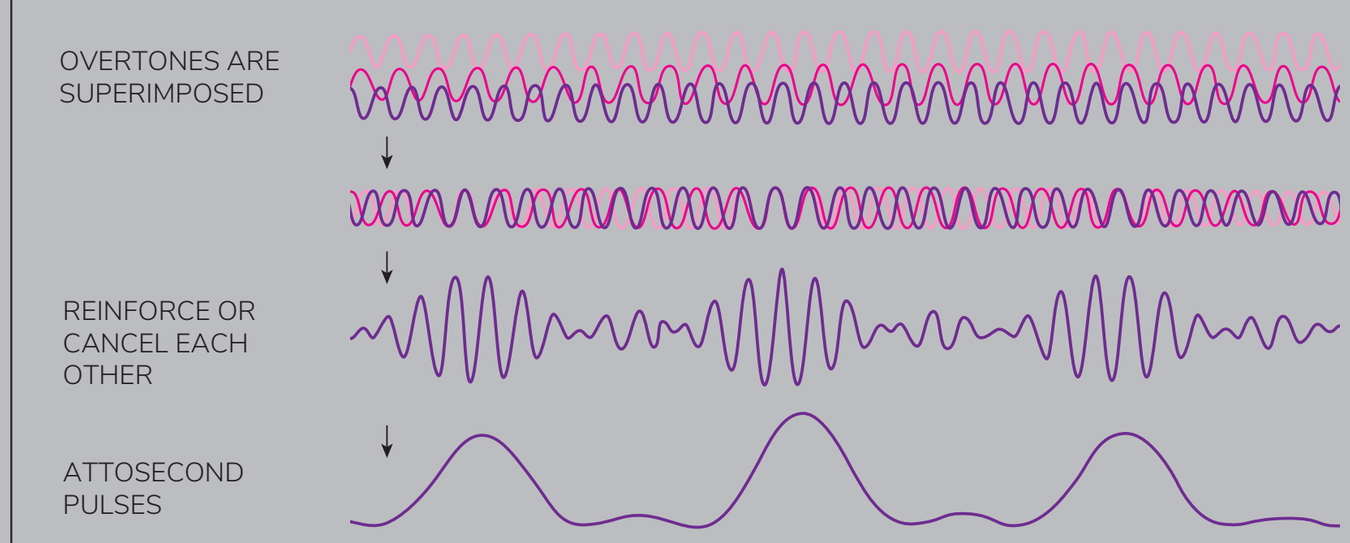
Room No. W03 1-161

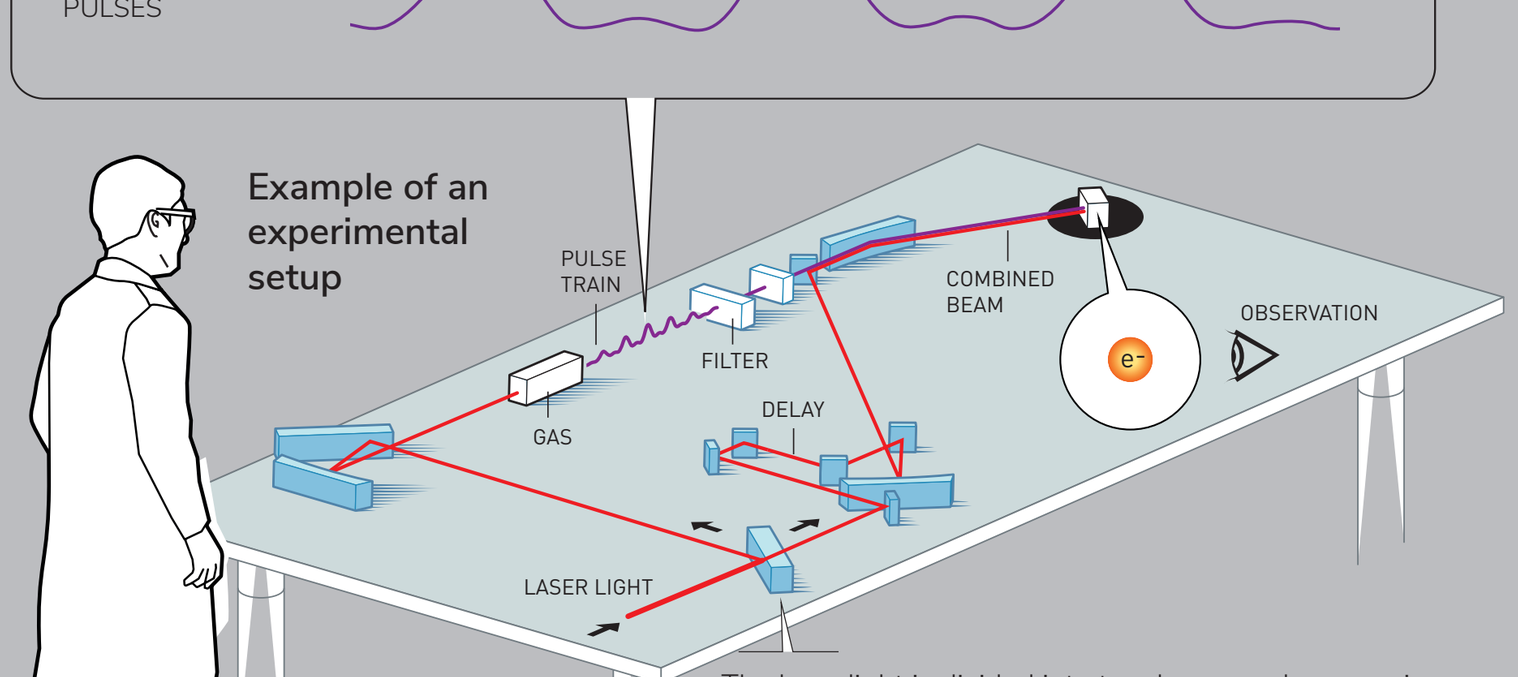
When an intense laser interacts with a gas of atoms, high-order harmonics are generated. In the time domain, this radiation forms a train of extremely short light pulses, of the order of 100 attoseconds. Attosecond pulses allow the study of the dynamics of electrons in atoms and molecules, using pump-probe techniques. This presentation will highlight some of the key steps of the field of attosecond science.

Host: Dr. Jan Vogelsang

The world of electrons is explored with the shortest of light pulses

When laser light is transmitted through a gas, ultraviolet overtones arise from the atoms in the gas. In the right conditions, these overtones may be in phase. When their cycles coincide, concentrated attosecond pulses are formed.





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The laser light is divided into two beams, where one is used to create a train of attosecond pulses. This pulse train is then added to the original laser pulse and the combination is used to perform extremely rapid experiments.