

Vorlesung SS 2015

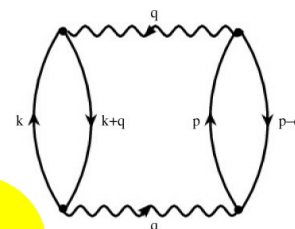
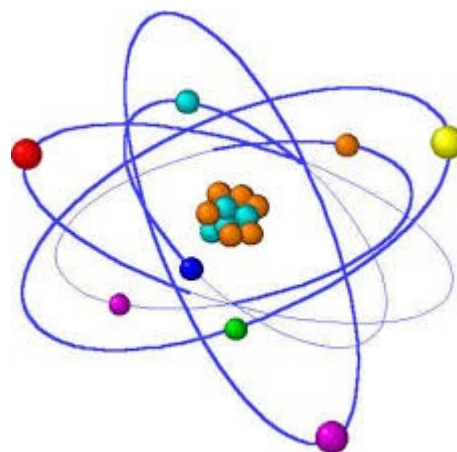
Theoretische Atomphysik

(Theoretical Atomic Physics)

Atomic, molecular, and optical (AMO) physics have always combined 'fundamental physics' with applications. Especially, the theory of atomic structures and collisions helped hereby to understand many elementary excitation, ionization and decay processes in Nature; this theory also nicely shows the *predictive power* of modern quantum mechanics. -- Despite the remarkable progress during the last decades, however, there are still many open questions where AMO science and technology will help provide answers by high precision laboratory measurements on the properties of atoms and molecules and to explore the mysterious and often counter-intuitive behaviour of microscopic particles.

From the content:

- Atomic theory: A short overview
- Review of one-electron atoms
- AMO Science in the 21st century
- Atomic many-electron systems
- Angular momentum in quantum physics
- Interactions of atoms with the radiation field
- ...



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Lecture: We 12-14, Physik, SR 1 (4 credit pts)
Tutorials: Thu to be agreed
Web site: www.atomic-theory.uni-jena.de/ → Teaching
Suitable for: Physics & Photonics (Msc, Bsc, from 5th term)
Start: **We, 15. 4. 2015, 12 ct**