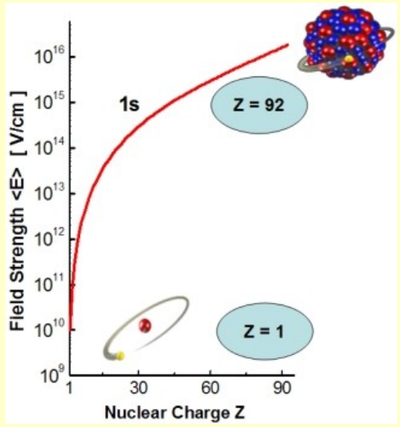
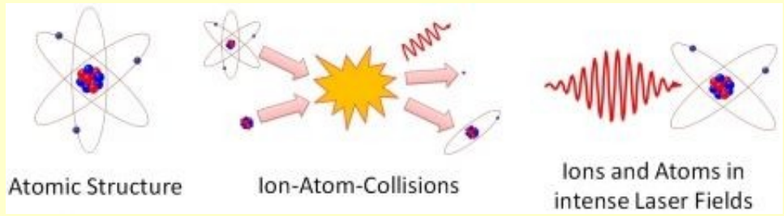
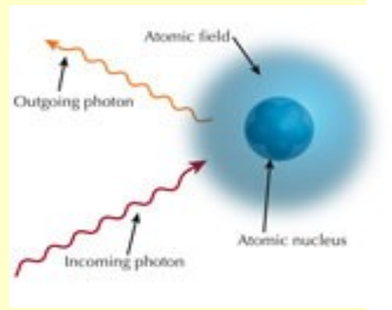
Relativistic quantum dynamics of ions & beams

$$\dot{\rho} = \frac{i}{\hbar}\,[H,\,\rho] + L\,\rho$$



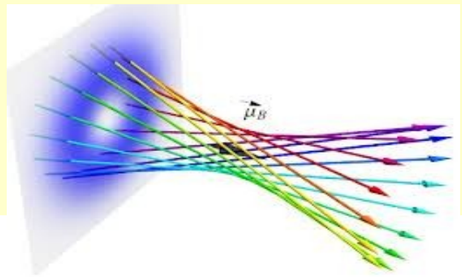




Relativistic quantum dynamics:

- Strong Coulomb fields
- Intense laser fields
- Non-linear electron-photon interaction
- Laser-driven electron & ion dynamics

Accurate Atomic Amplitudes (triple-A@Jena)



Strong-field QED & atomic many-body theory

Twisted particle beams; analysis & control of quantum processes

Computational physics & large-scale simulations; computer algebra

Applications in science & technology

(Data for astro & nuclear physics, atomic clocks, photonics, plasma & x-ray science)

+++++ Bachelor, Master & PhD topics available +++++

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