

### Summary points

- Spontaneous emission; absorption and stimulated emission ( $N + 1$ ); scattering
- Multiphoton processes (nonlinear optics)
- Radiative corrections
- Photon exchange

### Discussion points

- Electric field "per photon" and absorption cross-section
- $\langle E \rangle$  and spontaneous emission
- Laser cooling orders of magnitude
- Doppler-free versus Doppler broadened absorption in Hydrogen
- Photon statistics and two-photon absorption
- Van der Waals/Casimir, virtual transitions versus dipole fluctuations