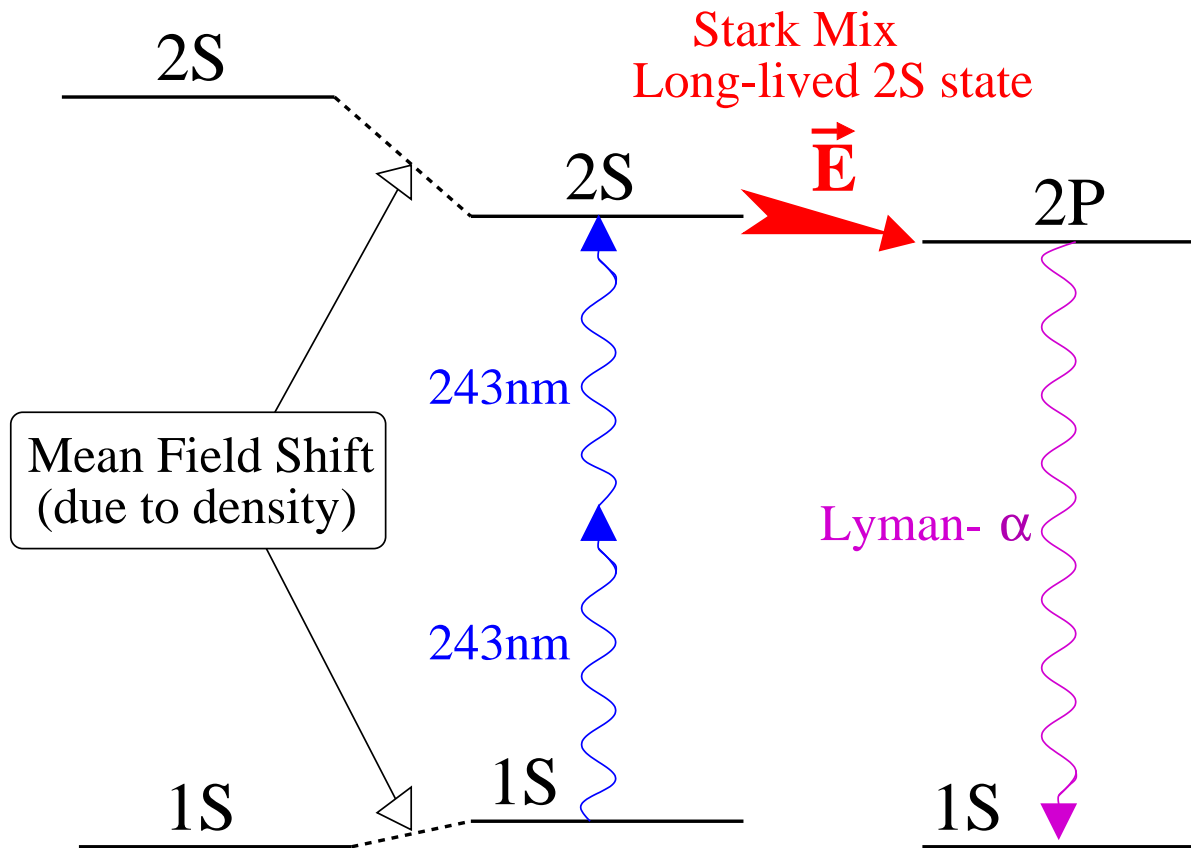
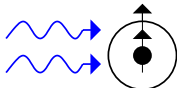
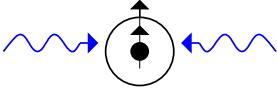


Two-Photon Spectroscopy



- **MEAN FIELD SHIFT:** $\Delta E_{ns} \propto \frac{\mathbf{n} \cdot \mathbf{a}_{1S-nS}}{m}$

- **TWO-PHOTON ABSORPTION:**

Doppler Sensitive  Doppler Free 

- **DETECTION:** Stark mix all (long-lived) 2S atoms to the rapidly decaying 2P state, we detect the **Lyman- α** photons.
- **2S LIFETIME:** ~ 100 ms in our trap