HCN — Rovibrational distributions

at the end of pulse:

- **parity conservation law**
  - $\Rightarrow$ off-resonant: only even $J$
  - $\Rightarrow$ on-resonant: even $J$ for $v = 0, 2$, odd $J$ for $v = 1$

Ro.-vib.-Distr. for $\omega_1 = 1075\text{cm}^{-1}$

Ro.-vib.-Distr. for $\omega_1 = 3211\text{cm}^{-1}$
Nonadiabatic Alignment of NaI

M. Machholm, JCP 115, 10724 (2001); 15/12/2001

- alignment field: ps-pulse, far IR (100-400 cm$^{-1}$), $10^{11}$-$10^{12}$W/cm$^2$
- vibrationally and rotationally off-resonant
- long-time evolution

**Results**

- $\mu_0$-contribution through Raman-transitions (not quenched)
- short time scale: $\langle \cos^2 \theta \rangle = 0.7$; long time scale: $\langle \cos^2 \theta \rangle = 0.91$
- different $J_{init}$: thermal robustness of alignment
- optimal pulse length: $0.001\hbar/B$