Inhomogeneous case : $\gamma_1 < \gamma_1'$ Spin 1 Spin 2 $|m_s = +1\rangle$

 $|m_s=-1
angle$ Optical pumping Optical pumping $\gamma_{\rm las}$ $\gamma_{\rm las}$ $|m_s=0\rangle$ $|m_s=0\rangle$ Spin 2 is less polarized than spin 1 $(\rho_{00}^2 < \rho_{00}^1)$

 \rightarrow The process $|0;-1\rangle \rightarrow |-1;0\rangle$ is more likely than $|-1;0\rangle \rightarrow |0;-1\rangle$ \rightarrow The combined action of the dipolar coupling and the inhomogeneous relaxation rates can reduce the ensemble spin lifetime