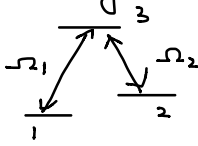
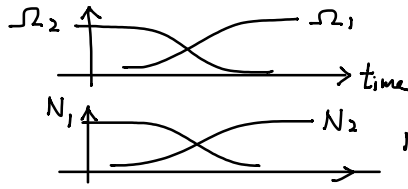


Review:

3-level system



Stimulated Raman Adiabatic Passage STIRAP.

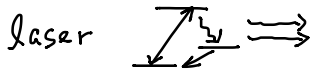
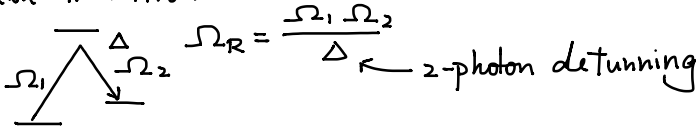


Dark state

$$|D\rangle = \Omega_2 |1\rangle - \Omega_1 |2\rangle$$

also used to prepare $|1\rangle + |2\rangle$ like $\pi/2$ pulse

Raman transition

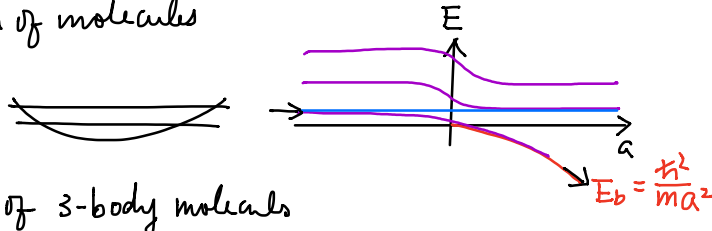


Feshbach resonance application

1. From weak to strong interaction

Boson \longrightarrow 3-body physics, 4-body take over
 Fermion \longrightarrow BEC-BCS cross-over

2. Creation of molecules



creation of 3-body molecules

Efimov physics

3. Run of the mill application

Project a general wave function in plain wave basis
 quickly go to $a=0$.

4. Unknown applications: Bose fireworks, metrology.
 Squeezing for quantum information