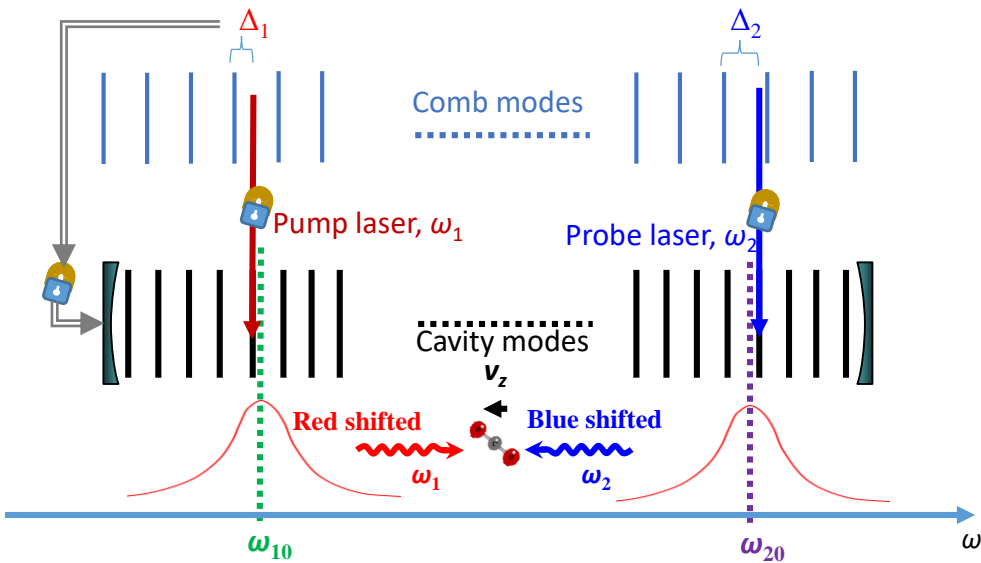


P5070: Comb-Locked Cavity-Assisted Double Resonance (COCA-DR) Spectroscopy of Molecules with kHz Accuracy

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- Double resonance (DR) of molecules could be used for precision spectroscopy, labelling transitions ...
- Optical-optical double resonance spectroscopy realized with cw-diode lasers of milliwatts.
 - High-finesse cavity is used to enhance both pumping efficiency and probing sensitivity
 - Molecules with selected velocity were probed



$$\omega_1 = \omega_N = \omega_{10} (1 - v_z/c)$$

$$\omega_2 = \omega_M = \omega_{20} (1 + v_z/c)$$

➤ All three types of DR transitions with narrow linewidth

- Frequency accuracy $\sim 3\text{kHz}$ ($\delta f/f \sim 10^{-12}$)
- Recoil shifts in two-photon spectroscopy

