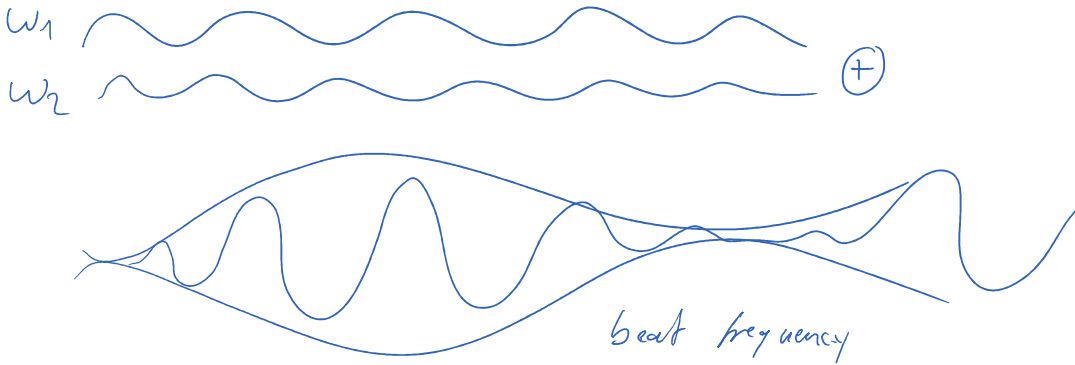


Optical frequencies are too high (100s of THz) to be counted

2 waves (light, sound, RT, ...) interfere  
if  $\omega_1 \approx \omega_2 \rightarrow$  hear/see beat signal



$$\omega_{\text{beat}} = |\omega_1 - \omega_2|$$

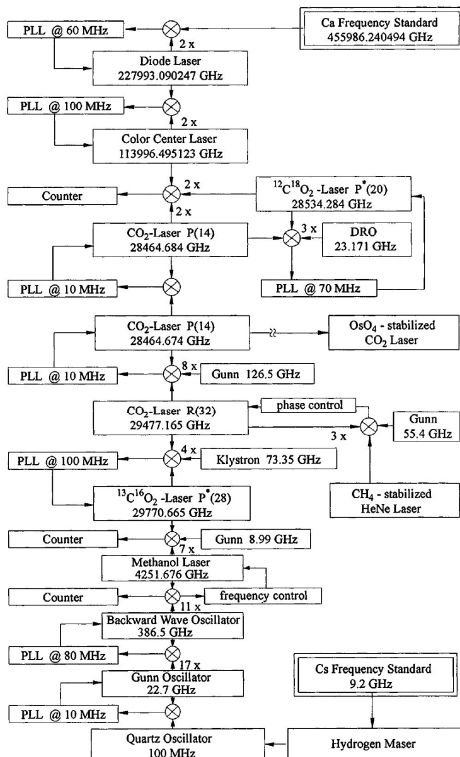
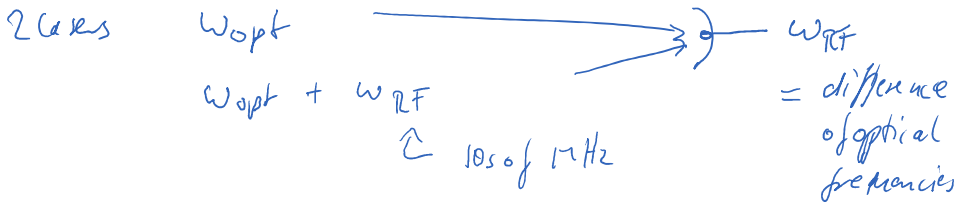


FIG. 1. PTB's frequency chain to the Ca intercombination line (PLL = phase locked loop, details are given in the text).

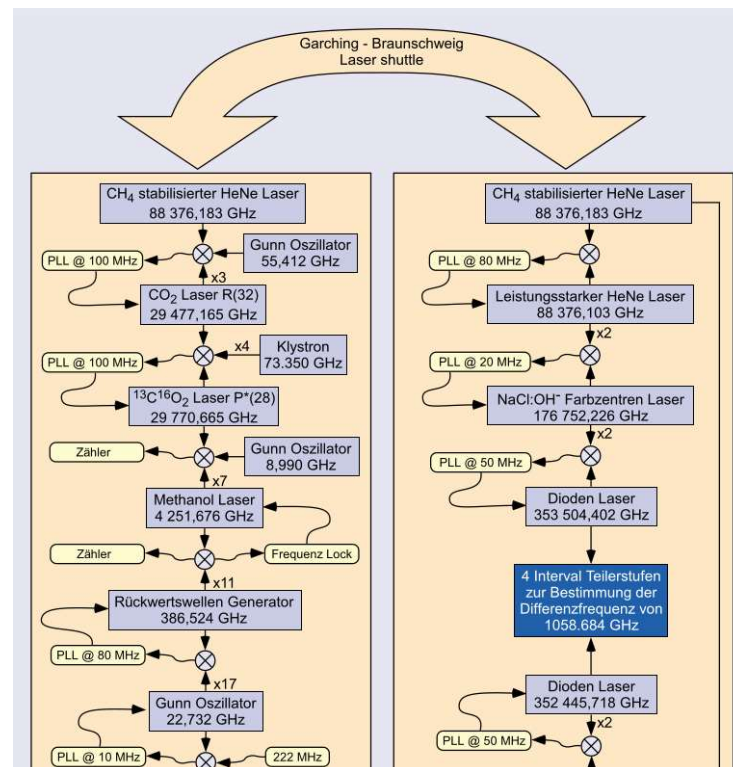
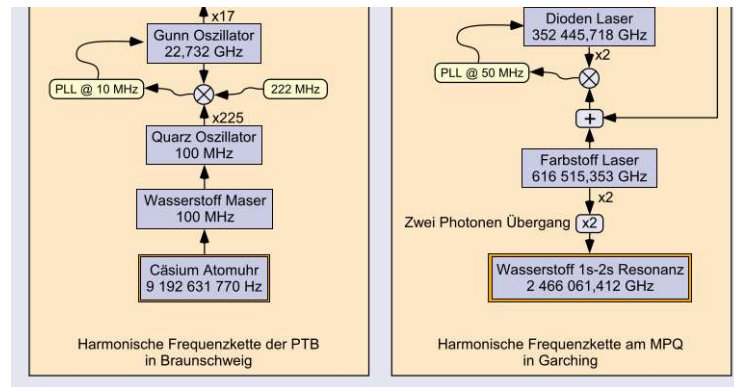
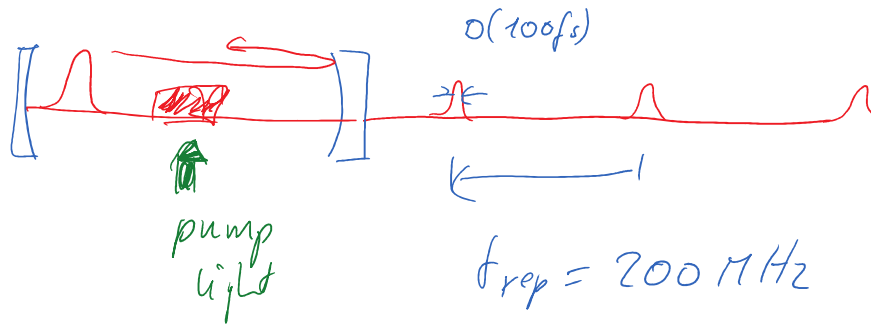


FIG. 1. PTB's frequency chain to the Ca intercombination line (PLL = phase locked loop, details are given in the text).

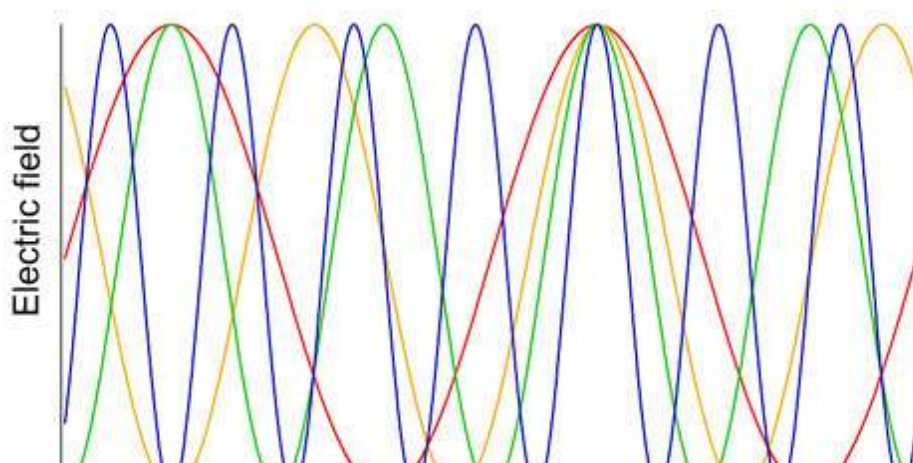
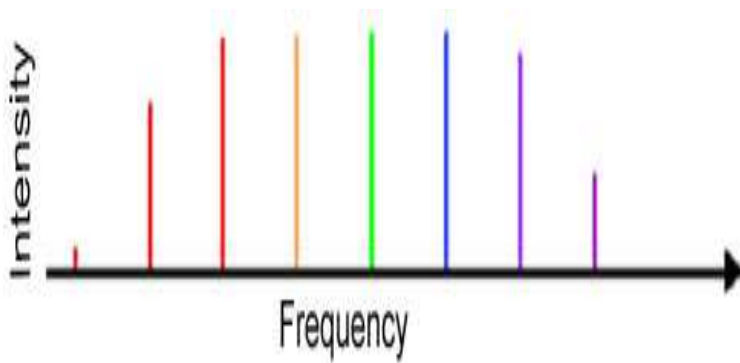


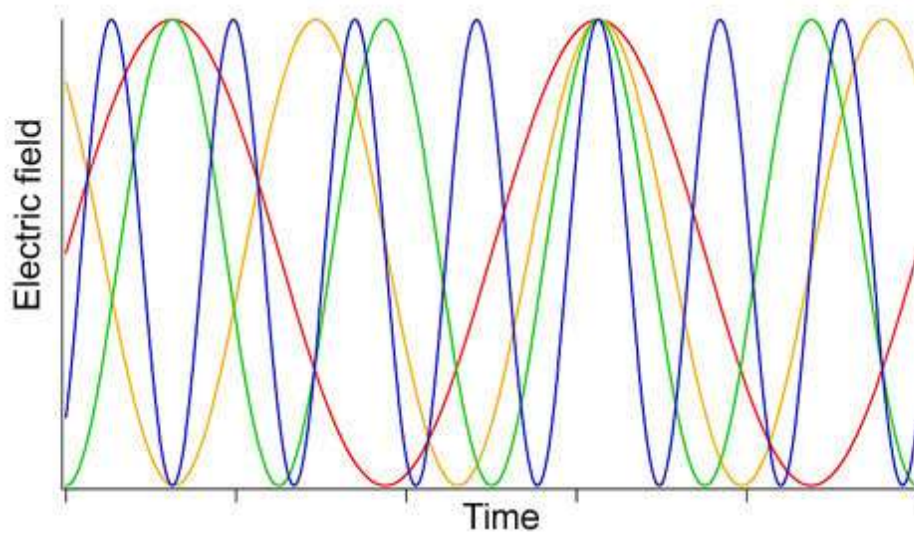
Today : Frequency comb  
Laser



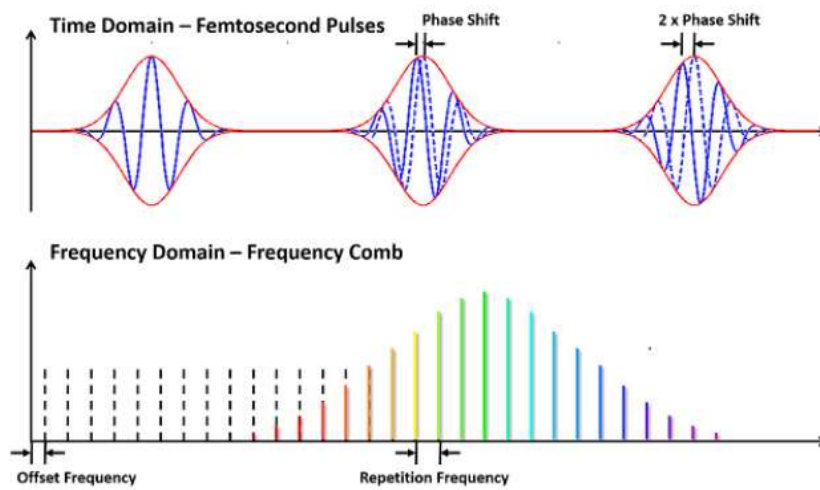
mode-locked  
laser

5ns roundtrip time  
in opt. resonator





## Fourier transform



<https://www.laserfocusworld.com/articles/2015/03/cornell-cmos-compatible-mid-ir-optical-frequency-comb-fits-on-1-mm-chip.html>