

Abstract Submitted  
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**Ramsey fringe width compared to the spectral width of the driving pulse pair** JAMES SUPPLEE, Drew University and Stevens Institute of Technology, VARUN (MAC) MAKHIJA, Drew University — In a population inversion versus detuning curve, fringes due to a Ramsey pulse-pair are vastly narrower than a peak due to just one of the pulses would be. For subtler reasons, the Ramsey fringe width is also less than the inversion peak that would be obtained using one long pulse with duration as long as the entire Ramsey pair including the time between pulses. This narrowing is by a factor of about 0.6 in many typical circumstances, but that factor can vary (sometimes significantly) depending on parameters such as pulse duration, pulse area, and time between pulses. We are doing calculations using an idealized semiclassical model with a two-level quantum system to address the following question: In which parameter regimes is the Ramsey fringe width well explained just by the spectral width of the driving pulse pair?

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