

Abstract Submitted
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Raman superradiance in atomic gases TUN WANG, SUSANNE YELIN, University of Connecticut — A mean field theory for Raman superradiance with recoil is presented to analyze recent Raman superradiant experiments [Phys.Rev. A 69, 041603(R) and Phys. Rev. A 69, 041601(R)]. Recoil is found to induce the decay of Raman coherence. Instability analysis shows that the Raman transition may have a collective instability when the decay of the optical field is small. Comparison with Rayleigh superradiance is also included.

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