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Cascaded emission from cold atomic ensembles¹ HSIANG-HUA JEN, Georgia Institute of Technology, STEWART JENKINS, Univ. of Insubria, ALEX KUZMICH, BRIAN KENNEDY, Georgia Institute of Technology — We study the phase matched two-photon cascade emission from a collection of cold alkali atoms induced by two color laser excitation. The cascade configuration, which has recently been employed for the generation of polarization-entangled photon pairs at infra-red and telecommunication wavelengths Chaneliere et al. [PRL 96, 093604 (2006)], exhibits superradiant time scales for the infra-red field component. We will present a theoretical analysis which explain the characteristic features observed.

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