## Abstract Submitted for the MAR17 Meeting of The American Physical Society

Entanglement of condensed magnons via k-space fragmentation CLEMENT WONG, ARI MIZEL, Laboratory for Physical Science — Motivated by recent interest in quantum control of magnons in magnetic insulators, we propose a model for engineering momentum space entanglement of fragmented magnon condensates. We show that an applied sinusoidal magnetic field can drive a quantum phase transition into a ground state exhibiting macroscopic quantum entanglement. We discuss experimental signatures and prospects for realizing this model in chiral magnets and in yttrium-iron garnet (YIG).

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