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Title:

Magnon Condensate in Yttrium Iron Garnet Film

Abstract:

A gas of magnons in magnetic films differs from all other known systems demonstrating Bose-Einstein condensation, since it possesses two energetically degenerate lowest-energy quantum states with non-zero wave vectors. Therefore, BEC in this system results in a spontaneously formed two-component Bose-Einstein condensate described by a linear combination of two spatially non-uniform wave-functions. I present a novel model of a magnon condensate that is capable of explaining quantitatively recent experimental measurements of the contrast between components, the speed of sound and the observation of fractional vortices.