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## High-T c spin superfluidity in antiferromagnets

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### Abstract

We report the observation of the unusual behavior of induction decay signals in antiferromagnetic monocrystals with Suhl-Nakamura interactions. The signals show the formation of the Bose-Einstein condensation (BEC) of magnons and the existence of spin supercurrent, in complete analogy with the spin superfluidity in the superfluid He3 and the atomic BEC of quantum gases. In the experiments described here, the temperature of the magnon BEC is a thousand times larger than in the superfluid He3. It opens a possibility to apply the spin supercurrent for various magnetic spintronics applications. © 2012 American Physical Society.

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