

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Nonreciprocal magnon propagation in a noncentrosymmetric ferromagnet LiFe_5O_8 YUSUKE IGUCHI, SOICHIRO UEMURA, KAZUNORI UENO, YOSHINORI ONOSE, Department of Basic Science, University of Tokyo — In noncentrosymmetric materials, the relativistic effect extensively modifies the energy band of magnons as well as that of electrons. With use of microfabricated microwave antennae, we have demonstrated that the propagation of magnons with large momentum is nonreciprocal in a noncentrosymmetric ferromagnet LiFe_5O_8 . The nonreciprocity is clearly explained by the effect of asymmetric magnon band originating from the relativistic Dzyaloshinskii-Moriya interaction. This result may pave a new path to designing magnonic device based on the relativistic band engineering.

Yusuke Iguchi
Department of Basic Science, University of Tokyo

Date submitted: 05 Nov 2015

Electronic form version 1.4