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Nonreciprocal propagation of surface acoustic waves in Ni/LiNbO3 RYO SASAKI, YOICHI NII, YUSUKE IGUCHI, YOSHINORI ONOSE, Department of Basic Science, University of Tokyo — We investigated surface acoustic wave propagation in a Ni/$LiNbO_3$ hybrid device. We found that the absorption and phase velocity are dependent on the sign of the wave vector, which indicates that the surface acoustic wave propagation has nonreciprocal characteristics induced by simultaneous breaking of time reversal and spatial inversion symmetries. The nonreciprocity was reversed by 180° rotation of the magnetic field. The origin of the nonreciprocity is ascribed to interference of shear-type and longitudinal-type magnetoelastic couplings.

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