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De Haas-van Alphen Oscillations in KFe_2As_2 TAICHI TERASHIMA, MOTOI KIMATA, NOBUYUKI KURITA, HIDETAKA SATSUKAWA, ATSUSHI HARADA, KAORI HAZAMA, MOTOHARU IMAI, AKIRA SATO, SHINYA UJI, Natl. Inst. Mat. Sci. and JST, TRIP, Japan, KUNIHIRO KIHOU, CHUL-HO LEE, HIJIRI KITO, HIROSHI EISAKI, AKIRA IYO, AIST, Japan, HIDETO FUKAZAWA, YOH KOHORI, Chiba Univ., Japan, HISATOMO HARIMA, Kobe Univ., Japan — In order to clarify pairing mechanisms and symmetries of the new high-T_c superconductivity in the FeAs compounds, it is necessary to know their Fermi surfaces. We report on de Haas-van Alphen effect in KFe_2As_2, which is an end member of the high-T_c binary alloy (Ba, K)Fe_2As_2. It shows no magnetic or structural phase transition down to low temperatures and becomes superconducting below about 3 K. We have observed many dHvA frequencies and their angular dependences are basically $1/\cos\theta$, where θ is the angle between the c axis and the magnetic field. At the moment, our analysis indicates that three quasi-two-dimensional FS cylinders have been observed and that they occupy about 1, 8, and 12% of the Brillouin zone, respectively. The effective masses of electrons are fairly heavy, ranging from 6 to 9 times the free electron mass for $B \parallel c$. This seems consistent with previously reported T^2 dependence of ρ with a large A coefficient [1] and large Sommerfeld coefficient of the specific heat [2]. [1] T. Terashima *et al.*, JPSJ 78, 063702 (2009). [2] H. Fukazawa *et al.*, JPSJ 78, 083712 (2009).

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