

Abstract Submitted
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High Magnetic Field Studies of Pressure-induced Superconductor EuFe_2As_2 NOBUYUKI KURITA, MOTOI KIMATA, KOTA KODAMA, ATSUSHI HARADA, HIROYUKI SUZUKI, TAKEHIKO MATSUMOTO, SHINYA UJI, TAICHI TERASHIMA, National Institute for Materials Science, KEIZO MURATA, Graduate School of Science, Osaka City University — We have performed resistivity and susceptibility measurements of the pressure-induced superconductor EuFe_2As_2 under high magnetic fields up to 27 T. The upper critical field B_{c2} and its pressure evolution up to 3.2 GPa were determined in a wide temperature range down to 1.6 K. At 2.5 GPa, nearly the optimal pressure with $T_c=30$ K, $B_{c2}(0)$ obtained by the onset of resistive transitions are 25 T and 22 T for $B \parallel ab$ and $B \parallel c$, respectively, which are appreciably smaller than those for other Fe-based superconductors with similar T_c . The small $B_{c2}(0)$ values and the peculiar $B_{c2}(T)$ curves in EuFe_2As_2 can be explained by a multiple pair-breaking model including the exchange field due to the magnetic Eu^{2+} moments. We will also present the results of quantum oscillations observed above the optimal pressure.

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