

## Superconducting Critical Fields in $\text{K}_{0.8}\text{Fe}_2\text{Se}_2$ (LT26)

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We report the results of an experimental study of dc and low frequencies magnetic properties of  $\text{K}_{0.8}\text{Fe}_2\text{Se}_2$  single crystal when the dc magnetic field is applied parallel to the **ab** plane. From the data obtained, we deduce the full H-T phase diagram which consists of all three  $H_{c1}(T)$ ,  $H_{c2}(T)$  and  $H_{c3}(T)$  critical magnetic field plots. The two  $H_{c1}(T)$  and  $H_{c2}(T)$  curves were obtained from dc magnetic measurements, whereas the surface critical field  $H_{c3}(T)$  line was extracted by ac susceptibility studies. It appears that near  $T_c$ , the  $H_{c3}(T)/H_{c2}(T)$  ratio is  $\approx 4.4$  which is much larger than expected 1.7 value.