Anomalous anisotropy in the RCo_4B compounds

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Abstract: The magnetic anisotropy of YCo_4B determined by the singular point detection (SPD) method and magnetization measurements over a large range of temperature is reported. The anisotropy energy of $CeCo_4B$ estimated by magnetization measurements is one order of magnitude larger than those of compounds with Y, La, or Gd. The temperature dependence of anisotropy energy in YCo_4B is discussed in the light of the temperature variation of the c/a ratio and the giant anisotropy of $CeCo_4B$ is presumed to be due to the itinerant character of the 4f states in the compound.

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