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Effect of Crystal Fields in $Ho_{1-x}Dy_xNi_2B_2C$ W.C. LEE, Dept. of Physics, Sookmyung Women's Univ. Seoul 140-742, Korea — From the anisotropy and the temperature dependence of magnetic susceptibilities of $Ho_{1-x}Dy_xNi_2B_2C$ system with magnetic field H perpendicular or parallel to c-axis, the crystalline electric field (CEF) effect has been studied and the magnetic exchange interaction constant J_{ex} of rare-earth ions perpendicular to the c-axis estimated for $0 \leq x \leq 1$. The crystalline electric field parameter, B_{02}, the first Steven parameter and the most dominant term in this system, are determined from the high-temperature-limit anisotropic Weiss temperatures of the magnetic susceptibilities and there is a broad minimum around $x \sim 0.3$, where superconducting transition temperature, T_C, and Néel temperature, T_N, are almost same.

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