A M??ssbauer study of the spin reorientation transition in $DyFe_{11}Mo$

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Abstract: The spin reorientation transition in $DyFe_{11}Mo$ around the spin reorientation temperature (220K) is investigated by M??ssbauer spectrometry. The temperature dependence of the hyperfine parameters for each Fe site reveals an obvious discontinuity of the hyperfine field. The magnitude of the discontinuity is more important for the 8f site than for the 8i and 8j sites, indicating that the most prominent contribution to the overall anisotropy in the Fe sublattice should be from the Fe ion at the 8f site. This is attributed to the 3d(Fe(8f))-3d(Mo(8i)) hybridization, which may play a quite important role in $R(Fe,Mo)_{12}$ compounds.

Author Keywords: $DyFe_{11}Mo$; M??ssbauer spectrometry; Spin reorientation

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