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Anisotropic Behavior in Intermediate Valence Yb2M3Ga9 (M = Rh, Ir) A.D. CHRISTIANSON, J.M. LAWRENCE, University of California Irvine, USA, N.O. MORENO, E.D. BAUER, J.L. SARRAO, J.D. THOMPSON, C.D. BATISTA, F.R. TROUW, M.P. HEHLEN, Los Alamos National Laboratory, USA, E.A. GOREMYCHKIN, Argonne National Laboratory, USA, C.H. BOOTH, Lawrence Berkeley National Laboratory, USA, A. LOBOS, A.A. ALIGIA, Centro Atómico Bariloche and Instituto Balseiro, Comisin Nacional de Energía Atómica, Argentina — $Yb_2M_3Ga_9$ (M = Rh, Ir) are intermediate valence systems which exhibit anisotropic magnetic susceptibilities. This anisotropy can be explained by crystal field level splitting that is similar in magnitude to the Kondo temperature. To examine this picture further, we have performed inelastic neutron scatting experiments on polycrystalline samples at 12 and 300 K for $Yb_2Rh_3Ga_9$ as well as measurements of the $4f$ occupation number of both $Yb_2Rh_3Ga_9$ and $Yb_2Ir_3Ga_9$. The inelastic neutron scattering spectrum indicates an inelastic response at low temperature and a quasielastic response at high temperature. These data are consistent with theoretical calculations based on an approach within the non-crossing approximation including the effects of crystal field level splitting.

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