Abstract Submitted
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**Metal-Insulator Transition in $Ce_{1-x}Gd_xFe_4P_{12}$ (x ∼0.1) observed by ESR.** M. TOVAR, Universidad Nacional de Cuyo, Mendoza, Argentina, F.A. GARCIA, P.G. PAGLIUSO, C. RETTORI, UNICAMP, Campinas, Brazil, P.A. VENEGAS, Univ. Estadual Paulista, Brazil, D.J. GARCIA, Cento Atomico Bariloche, Argentina, P. SCHLOTTMANN, Florida State University, M.G. PASSEGGI, INTEC, Conicet Santa Fe, Argentina, M.S. TORIKACHVILI, San Diego State University, S.B. OSEROFF, San Diego State University and Univ. Nacional de Cuyo, Argentina — Measurements by Electron Spin Resonance (ESR) of $Gd^{3+}$ impurities doped into single crystals of $CeFe_4P_{12}$ show the evolution from fully resolved ESR spectra with Lorentzian (insulator) shape lines into a single broad ESR line with a Dysonian (metallic) shape as a function of temperature. The fine and hyperfine structure splitting of $Gd^{3+}$ is clearly observed at low temperature in the fully resolved ESR spectra. From the spectra we determined the crystal field and hyperfine structure parameters. With increasing T the ESR lines broaden and finally collapse into a single Dysonian line at about 180 K. As T increases further the linewidth becomes broader at a rate of $\sim$ 1.1 Oe/K. We discuss the origin of the "Metal to Insulator" transition observed.

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