

Abstract Submitted
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On the local magnetic moment formation and on the magnetic hyperfine field at isoelectronic noble impurities (Cu, Ag, Au) diluted in GdZn: period effect.¹ C. M. CHAVES, Centro Brasileiro de Pesquisas Físicas, A. L. DE OLIVEIRA, Instituto Federal de Educação, Ciência e Tecnologia do Rio de Janeiro, N.A. DE OLIVEIRA, Instituto de Física, UERJ, A. TROPER, Centro Brasileiro de Pesquisas Físicas — In this work we study the period effect on the local magnetic moment and the related magnetic hyperfine field at non-magnetic s-p impurities (Cu, Ag, Au) diluted in GdZn, the impurity occupying a Zn site. The period effect refers to the difference of the local moment and the hyperfine fields in these noble isoelectronic ($nd10ms1$, $n = 3, 4, 5$, $m = 4, 5, 6$) impurities that apparently would have similar moments and hyperfine fields, which is not the case. We show that the difference on the local moments is due to the differences of volumes of the impurities with respect to the host Zn ion while the difference of the hyperfine fields is due to different contact parameter $A(Z_{imp})$, which depend mainly on the principal quantum numbers of the impurity shell m . We further extend our model to calculate the temperature variation of the local magnetic moment and of the hyperfine field for each impurity; for this calculation we adopt a functional integral approach in the static approximation . .

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