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**Low temperature physical properties of  $R_3Co_4Sn_{13}$  ( $R = La, Ce, Pr, Nd$  and  $Gd$ )** E.M. BITTAR, O. AGÜERO, R.R. URBANO, L. MENDONÇA FERREIRA, C. RETTORI, I. TORRIANI, P.G. PAGLIUSO, Instituto de Física “Gleb Wathagin”, UNICAMP, 13083-970, Campinas, Brazil — We report the low temperature physical properties of the series of compounds  $R_3Co_4Sn_{13}$  where  $R=La, Ce, Pr, Nd$  and  $Gd$ . They crystallize in a cubic  $Yb_3Rh_4Sn_{13}$  type structure, space group  $Pm-3n$ , which has 40 atoms per unit cell. Measurements of magnetic susceptibility, electrical resistivity, and low temperature heat capacity were carried out on single crystals grown from Sn-flux. These compounds order antiferromagnetically at low temperature ( $T_N < 15$  K) for  $R = Nd$  and  $Gd$ , while  $Pr_3Co_4Sn_{13}$  and  $Ce_3Co_4Sn_{13}$  are paramagnetic down to 2K. In addition  $Ce_3Co_4Sn_{13}$  display heavy fermion behavior and  $La_3Co_4Sn_{13}$  is a Pauli paramagnetic which superconducts at 2.3 K. The present data are compared to the magnetic properties of the isostructural  $R_3(Rh, Ir)_4Sn_{13}$  compounds, and the validity of de Gennes scaling as a function of rare earth for these materials is discussed.

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