

Abstract Submitted
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Ferromagnetism and short range order in Pt-Co and Pt-Mn alloys

RIXIO PARRA — Alloys of Pd and Pt with magnetic impurities behave magnetically very much alike. For example, recent diffuse neutron scattering measurements in single crystals show that Pt-Mn alloys tend to become ferromagnetic as the concentration of Mn is lowered. Pt-Mn alloys with concentrations $c = 3$ at. percent Mn show ferromagnetism and above 5 at. percent behave as spin glasses, turning at higher concentrations as antiferromagnets. However, Pt-Mn become ferromagnetic at concentrations above 8 at. percent Mn, the atomic structure changes to a Cu₃Au type, and atomic short range order is observed, with preference of Mn to have Pt atoms as first neighbour. In this work we analyzed the experimental data of Pt-Mn and Pt-Co, using a ferromagnetic model that has been applied to other Pt and Pd alloys, where the impurity is magnetic (Fe, Co or Mn).

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