Abstract Submitted
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Spin polarization in Co-Pt alloys J. PULIKKOTIL, V. ANTROPOV, Ames Laboratory, Ames IA 50011, M. FAIZ, R. PANGULURI, B. NADGORNY, Wayne State University, Detroit MI 48201, C. KAISER, S. PARKIN, IBM Almaden Research Center, San Jose CA 95120 — The degree of spin polarization in the system of disordered Co-Pt alloys has been studied using density functional approach. The electronic structure of several ordered intermetallics have been analyzed in details. Our analysis is focussed on the difference between magnetization and the degree of spin polarization as a function of Pt concentration, measured by spin tunneling spectroscopy[1] and Andreev reflection spectroscopy[2]. Several factors influencing the deviation of these quantities from a linear behavior have been identified. We attempt to explain the dependence of spin polarization on magnetization observed experimentally by both techniques. We also discuss the effect of different tunnel barriers observed in Ref.[1]. In general, experimental tendencies have been confirmed using *ab-intio* methods, and we consider the possible origin of spin polarization in these alloys.

[1] C. Kaiser, S. van Dijken, S.-H. Yang, H. Yang, and S. S. P. Parkin, Phys. Rev. Lett. 94, 247203 (2005)
[2] R. P. Panguluri *et al*, unpublished

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