

STRAIN DEPENDENCE OF EXCHANGE INTERACTIONS
IN DILUTE PdFe ALLOYS AND IN PURE Pd

by

E. Fawcett, D. B. McWhan, R. C. Sherwood
Bell Telephone Laboratories, Incorporated
Murray Hill, New Jersey

and

M. P. Sarachik^{*}
City College of CUNY
New York, New York

ABSTRACT

Measurements of the magnetostriction and the pressure dependence of the Curie temperature in ferromagnetic alloys of Pd containing 0.3, 1 and 3 atomic percent Fe provide independent evidence for a positive strain-dependence of the exchange interaction between the conduction electrons and the local moments, which contrasts with the negative strain-dependence of the exchange interaction between the conduction electrons in pure Pd.

* Supported by Air Force Office of Scientific Research, Office of Aerospace Research, under Grant AFOSR 894-67