

another in a time which is much shorter than the neutron passage time of 10^{-8} seconds, then the neutron would see just the average of the different states and all iron atoms would appear identical, in agreement with experiment. Since it appears necessary to admit of a mixture of states to account for the odd moment, this may very well be a reasonable picture.

ACKNOWLEDGMENT

We wish to thank Mr. L. A. Rayburn for considerable assistance in the preparation of suitable samples and in some of the later data accumulation. Very helpful conversations and correspondence with Dr. J. E. Goldman, Dr. J. C. Slater, and Dr. C. Zener have been appreciated.

DISCUSSION

W. J. CARR, JR., *Westinghouse Research Laboratory, East Pittsburgh, Pennsylvania*: In connection with the data on Ni_3Mn and Ni_3Fe it seems worth pointing out that, since the alloys did not have perfect order, one would expect a number of Mn or Fe nearest neighbors to exist. If such Mn or Fe nearest neighbors exhibit an antiferromagnetic behavior, it would require a reinter-

pretation of Dr. Shull's data and lead to different calculated moments for the Fe, Mn, and Ni atoms.

H. ECKSTEIN, *Armour Research Foundation, Chicago, Illinois*: Have you assumed purely elastic scattering? Is it possible that the spin coupling is only of the order of a fraction of an ev? Then the elastic scattering should be considered.