Enfin l'analyse des facteurs de structures magnétiques de Y_2Co_{17} montre que la polarisation négative des électrons de conduction varie beaucoup dans la maille : elle passe de - 0,035 $\mu_B/\text{Å}^3$ dans les zones de substitutions à - 0,007 $\mu_B/\text{Å}^3$ dans les zones où la densité en atomes de cobalt est plus faible.

c) *Polarized neutron study of the magnetization distribution in ternary iron - cobalt silicide*

(V. JACCARINO, F. MEZEI (ILL), J. SCHWEITZER (DRF/DN) and J.H. WERNICK (Bell Laboratories, Inc., Murray Hill))

The intermetallic compounds $(FeSi)_x$ $(CoSi)_{1-x}$ at concentrations $x < 0.1$ show local moment behavior with 3 μ_B magnetic moment per Fe atom residing exclusively on the Co nearest neighbors instead of the Fe impurity site itself. The higher concentration ($0.2 < x < 0.8$) alloys are ferromagnetic with a maximum magnetization of $0.34\mu_B$ per Fe atom around $x = 0.5$, and while earlier Fe^{57} Mössbauer work indicated a Fe moment less than 0.1 μ_B, more recent Co^{59} NMR studies suggested a fairly equal distribution of the magnetization on Fe and Co. Due to the relatively large difference between the nuclear neutron coherent scattering lengths of Fe and Co, the neutron polarization dependent interference of nuclear and magnetic disorder scattering is a sensitive measure of $\bar{\mu}_{Fe} - \bar{\mu}_{Co}$ in a fully magnetized sample. We have investigated an $x = 0.5$ concentration sample consisting of about 50 small, randomly oriented single crystals, using 0.84 Å polarized neutrons. The data normalized to the nuclear incoherent cross section of the sample itself suggest a value of $\bar{\mu}_{Fe} - \bar{\mu}_{Co} = 0.04 \pm 0.025$ μ_B at 4.2 K and 15 KOe, i.e., a nearly equal distribution of the magnetization in contrast to the small x case. Our result seems to contribute to the accumulating evidence that the ferromagnetism in this system is of weak itinerant character.