

⁷Preliminary results from the Magnetic Detector Group of the Stanford Linear Accelerator Center—Lawrence Berkeley Laboratory collaboration at SPEAR (W. Chinowsky, private communication).

⁸B. Knapp *et al.*, Phys. Rev. Lett. **34**, 1040 (1975). Electroproduction has been observed at the Stanford Linear Accelerator Center and the two groups agree with each other (D. M. Ritson *et al.*, to be published).

⁹C. G. Callan and D. J. Gross, Phys. Rev. Lett. **22**, 156 (1969).

¹⁰The same calculation can be done for two- φ production in NN collision. However, because of the φ mass being much smaller than the ψ mass [$m_\varphi^2 \approx (\frac{1}{9})m_\psi^2$], distinction between an elementary φ exchange and a Reggeized φ exchange is far less clear (different only by a factor of ~ 10 with $\eta_0 \approx 2$), and no high-energy production data are available except for a loose upper bound indirectly set by a measurement of large-transverse-momentum muons. [J. A. Appel *et al.*, Phys. Rev. Lett. **33**, 722 (1974)]. The Reggeized φ of normal slope ($\approx 1 \text{ GeV}^{-2}$) is fully consistent with this upper bound.

¹¹Appel, Ref. 10.

¹²The lepton pairs from single- ψ production do not seem to explain all of the excess. L. M. Lederman, Columbia University Report (to be published).

¹³Production of ψ has been observed very recently in n -Be collision at Fermi National Accelerator Laboratory [B. Knapp *et al.*, Phys. Rev. Lett. **34**, 1044 (1975)].

ERRATUM

NEW THEORY OF COERCIVE FORCE OF FERROMAGNETIC MATERIALS. R. Friedberg and D. I. Paul [Phys. Rev. Lett. **34**, 1234 (1975)].

We correct a factor of 4 error in our normalization of the defect parameter $W[(\alpha_1/\alpha_2) - (\beta_2/\beta_1)]$ to the material Fe-Si4%. The revised table given below improves the theory inasmuch as the expansion parameter, h , is now less than 0.06 for all materials. Further, page 1236, line 7 should read that the constants C_1 and C_3 have the values $-2HS_1$ and $+2HS_1$, respectively.

TABLE I. Values of the coercive force due to grain boundaries. We assume the values $W = 6 \times 10^{-8} \text{ cm}$, $\alpha_1/\alpha_2 = 1.1$, $\beta_2/\beta_1 = 0.85$, and $S_1/S_2 = 1$.

Material	S_1 Magnetization	$(\frac{1}{2})\beta_1$ Anisotropy (ergs/cm ³ × 10 ⁻⁵)	$(\frac{1}{2})\alpha_1$ Exchange (ergs/cm × 10 ⁶)	$2\delta_1$ - Domain Wall Width (cm × 10 ⁶)	h Expansion Parameter	H_c -Coercive Force (Oersteds)	Observed Coercive Force
Supermalloy	630.	0.015	1.5	64.	0.0002	^a 0.0004	0.002
Permalloy	860.	0.02	2.0	64.	0.0002	^a 0.0006	0.05
^b Iron-Si3%	1590.	3.7	2.2	4.8	0.0009	0.2	0.1
Iron-Si4%	1570.	3.2	2.1	5.2	0.003	0.5	0.5
Nickel	485.	0.7	0.5	5.2	0.003	0.3	0.7
Iron	1707.	4.8	2.4	4.4	0.003	0.7	1.
Cobalt	1400.	45.	4.7	2.0	0.007	20.	10.
^c Alnico	915.	260.	2.0	^c 0.56	0.024	600.	600.
Co ₅ Sm	800.	1500.	2.0	0.24	0.056	9000.	10000.

^aFor these materials, the coercive force may be dominated by magnetostatic effects. In particular, for Permalloy, the rapid quenching of the disordered state should produce high stress fields and a Kondorsky-Néel-type contribution to the coercive force.

^bThis material is grain oriented. Therefore, we use $W = 2 \times 10^{-8} \text{ cm}$.

^cModern theory suggests a spin-rotation mechanism rather than domain-wall motion for Alnico. We have used an effective anisotropy taken from theoretical estimates of the intrinsic coercive force.