⊩ INTERNAL FIELD PROBING OF TRANSLATING FRCs

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DISCLAIMER

MASTER

B_Θ are typically .16 B_w (B_z measure
B_Θ, if it were part of an elongated e
percent change in β, where the averag
$1/2 \ x^2 - 1/2 \ (B_{\Theta rms}/B_w)^2$.

Simulations of B_Θ generation have
MHD code.[4] The simulations used
approximately matched to the source f
μs, in which the FRC has translated
guide field region on the left. The
field values of both signs. However,
of the FRC and weakest near the field
found to be ~ 10% of the poloidal flu
which the toroidal flux is typically
demonstrate that the Hall term in
toroidal field generation[5] in the reg
gradients during FRC acceleration,
the subsequent toroidal field evoluti

References

1. D. J. Raj, et al., these proceed
2. D. W. Hewett and R. L. Spencer,
3. R. L. Spencer, and M. Tussewski,
4. R. D. Milroy, Bull. Amer. Phys.
5. D. W. Hewett, Nuclear Fusion <u>24</u>,

|	T.
	Plasma
	Triple-Axis Probe
	Source	Tran:
	($t=10$μs)	($t=3$
B_o (kG)	5.5	
n^o (10^{15} cm^{-3})	1.1	
T (eV)	630	
Φ_1 (kG cm^2)	175	
r_s (cm)	10	

Moreover, the toroidal flux is
ontrast to experimental results in
poloidal flux. These simulations
) equations can indeed account for
f asymmetric field and density
2-D MHD modeling does not predict

nergy.

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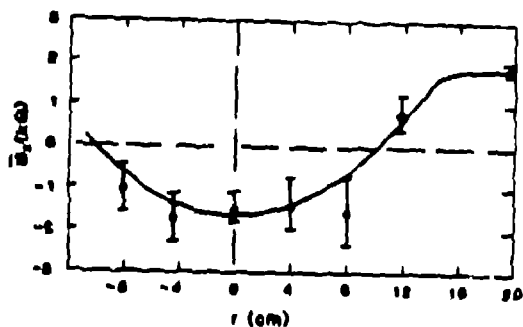| Radial Array Studies	
Source	Translation
(t=10 µs)	(t=30 µs)
5.3	3.5
1.3	0.6
490	400
230	345
11	13

$\int \text{ndl} \ (10^{15} \text{cm}^{-2})$
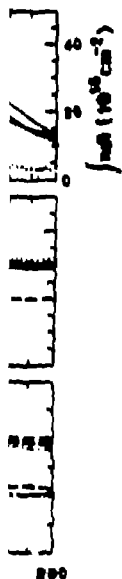
Fig. 2. Average B_z vs r for
triple-axis data.
Error bars are rms deviations
Solid curve is theoretical
profile.

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fferent
, r = 4.0
t dash),
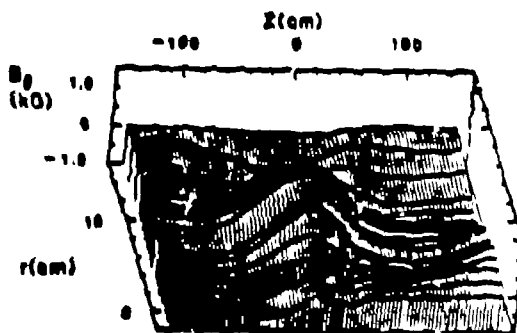olid),
as in b).

Fig. 3b. Radial array data:
B_θ vs r, z.