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Injection Capture vs. B

J. Herrera

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Collider Accelerator Department

Brookhaven National Laboratory

U.S. Department of Energy

USDOE Office of Science (SC)

DISCLAIMER

Blumberg
NO. 46

Study of Injection Capture vs a change in $\dot{B}$ (Nov 20, 1973)
HERRERA & RAU

A. Initial Conditions

1) $\dot{B}$ vs time is shown on Fig. (1)
2) Spiralling beam shown in Fig. (2)
3) Linac current about 45 to 50 ma for 120 μsec.
4) Machine was tuned for max. accelerated beam of 6.0×10^{12} p/p. Early monitor about 7.2×10^{12}

B. Experiment:

1) $\dot{B}$ vs time changed (Fig. (3))
2) Spiralling beam shown in Fig. (4)
3) Machine was tuned for max accelerated beam of about 6.5×10^{12} p/p. Early monitor was 8.0×10^{12}

C. Comments:

1) It appears that running at a higher $\dot{B}$ at injection with the higher r.f. voltage we presently use results in a higher overall accelerated beam.
2) Additional experiments with increased and decreased $\dot{B}$ are required.

J. Herrera
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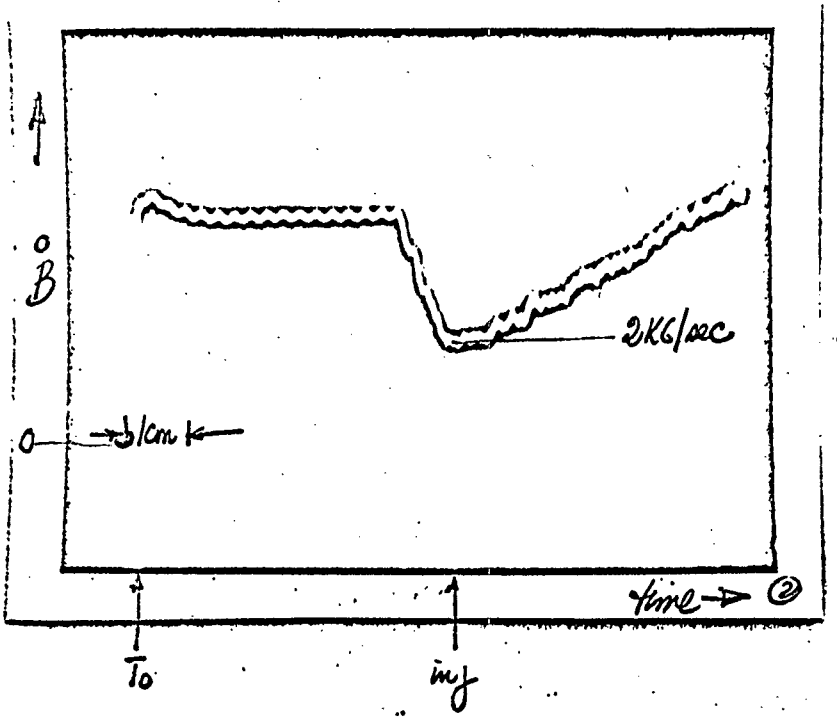
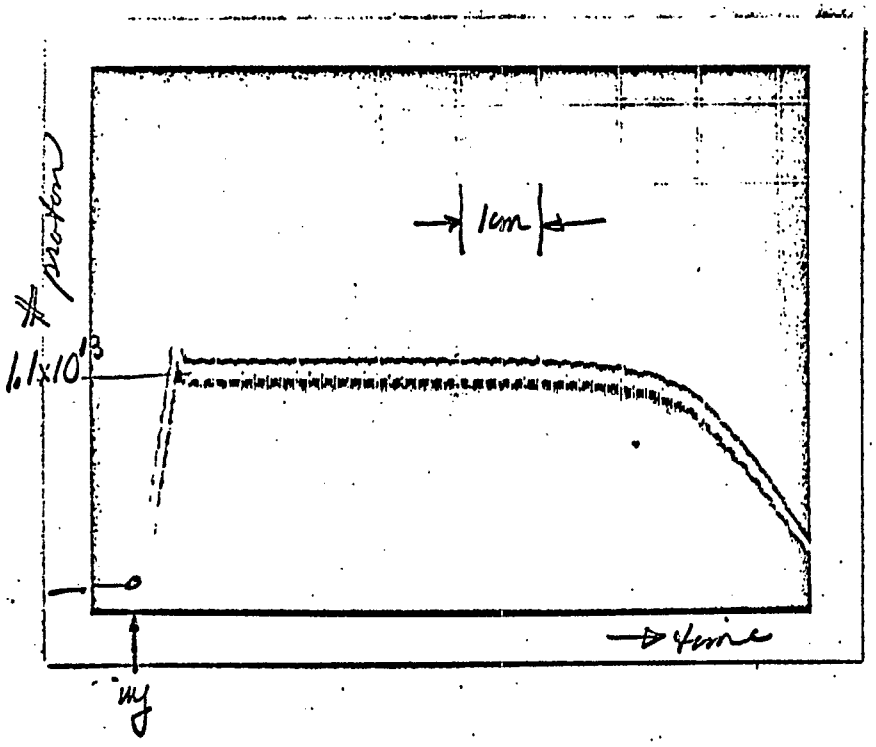


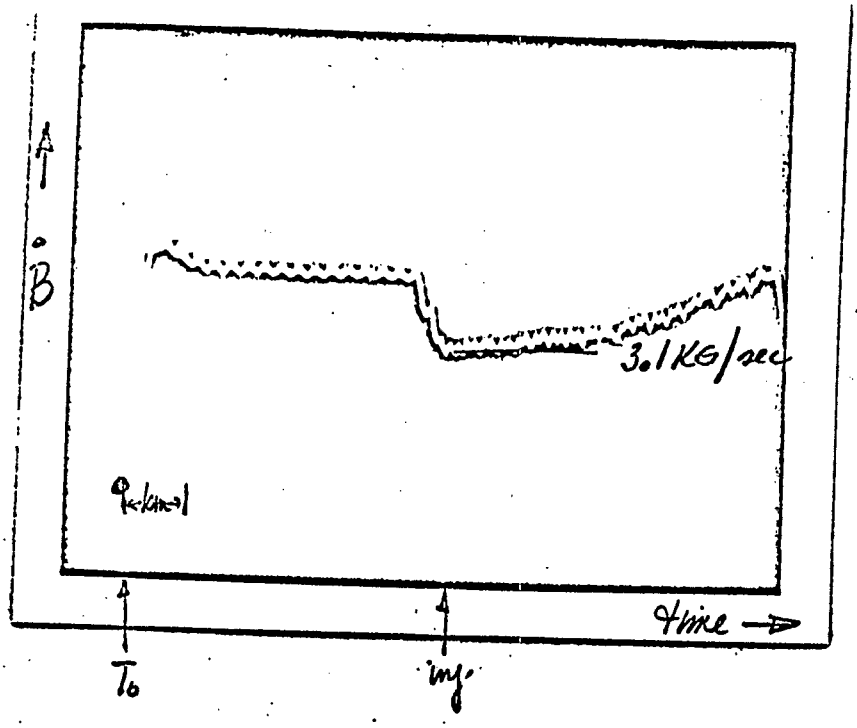
1) Backleg D3 magnet
2) 0.1 volt/cm
3) 10ms/cm

Fig. (1)



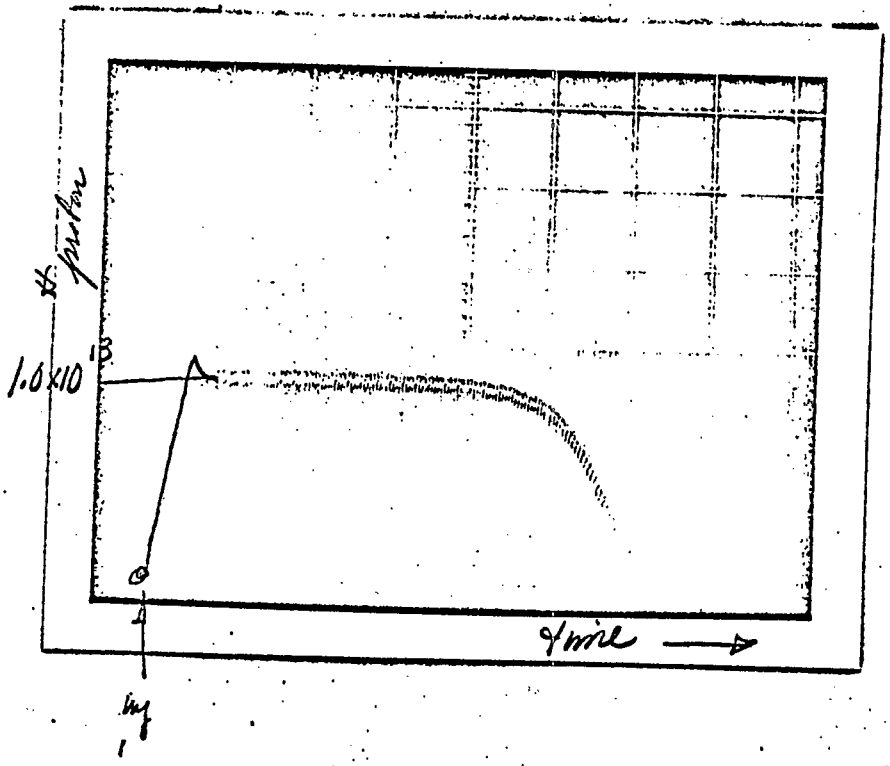
1) H 15 transformer
2) 1 volt/cm
3) 200 μsec/cm

Fig. (2)



1) Beckley D3 magneto
2) 0.1 volt/cm
3) 10 ms/cm

Fig. (3)



1) H 15 transformer
2) 1 volt/cm
3) 200 μsec/cm

Fig. (4)