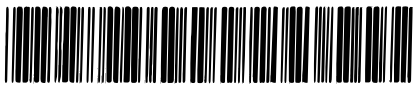
M11



ISR-OP/SM/svw

25th October, 1977

ISR PERFORMANCE REPORT

Run 882 P, 26/31 GeV/c, R2, 26.9.77

25.9 Amps at 31.4 GeV/c; Ring 2

SUMMARY

Since the installation of the new dedicated low noise phase displacement electronics in R2, several very low loss accelerations to 31.4 GeV/c have been made. The most recent and highest current to be attained is 25.9 Amps remaining at 31.4 GeV/c from 27.5 Amps at 26 GeV/c.

DETAILS

A stack of 27.5 Amps was made on the low-β acceleration working line in the normal way. After centering the stack by 10 mm, acceleration to 31 GeV/c was started. The evolution of the stack intensity is plotted as a function of momentum in Fig. 1. Initially the losses were extremely low (1 - 3 mA per sweep), however, the losses increased significantly between 28 and 29.5 GeV/c. In hindsight these losses were certainly provoked by a closed orbit distortion at the stack top. At 29.5 GeV/c a closed orbit correction brought the loss rate back to nearly its low initial value.

The evolution of the density profile of the stack is given in Figs. 2 and 3.

S. Myers

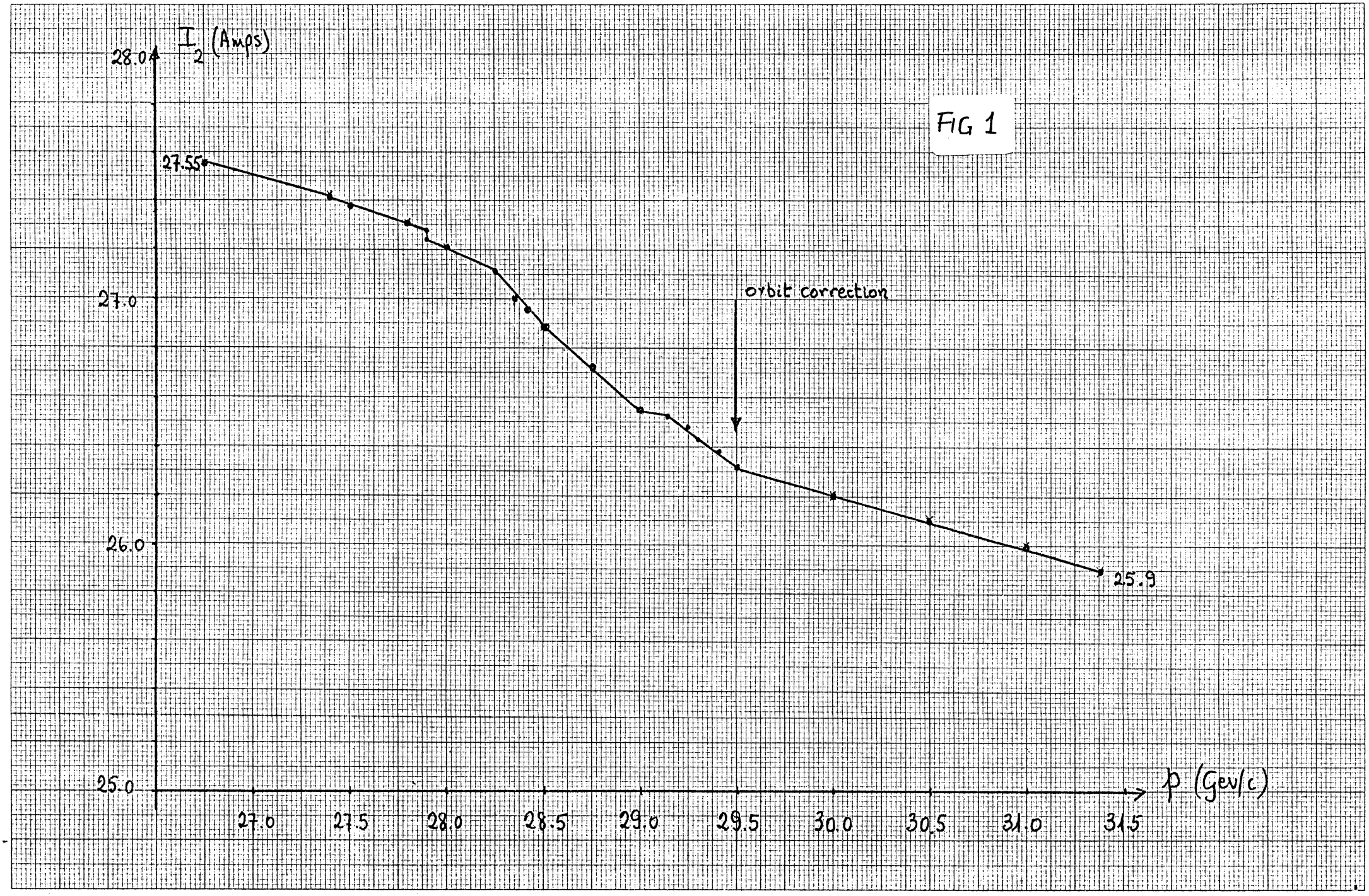
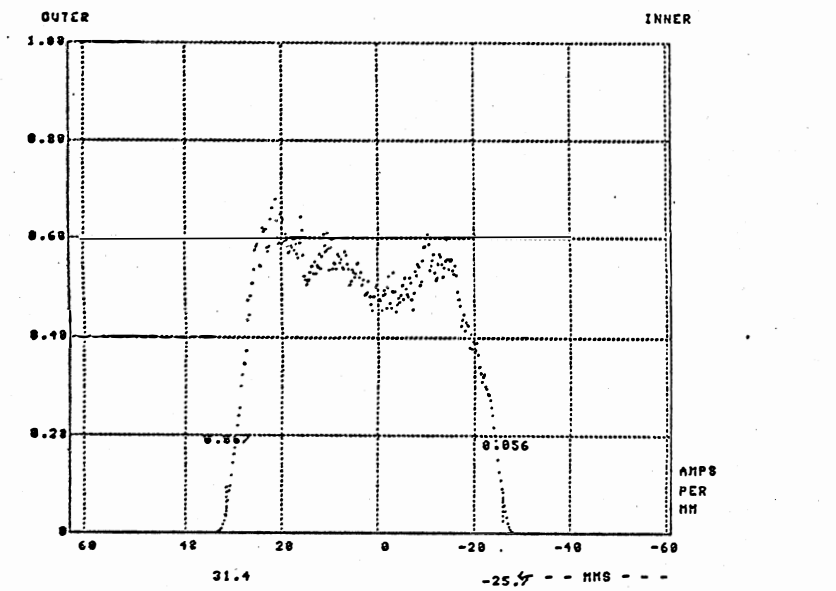
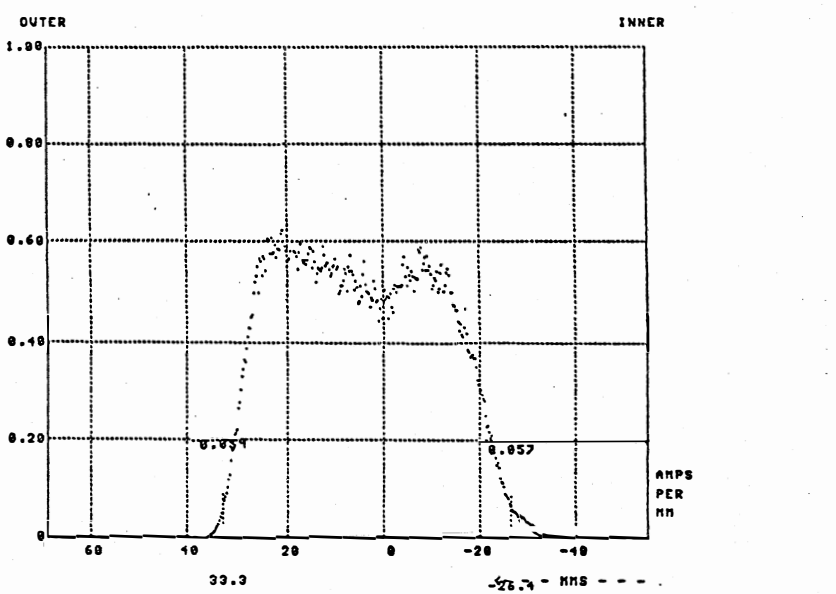
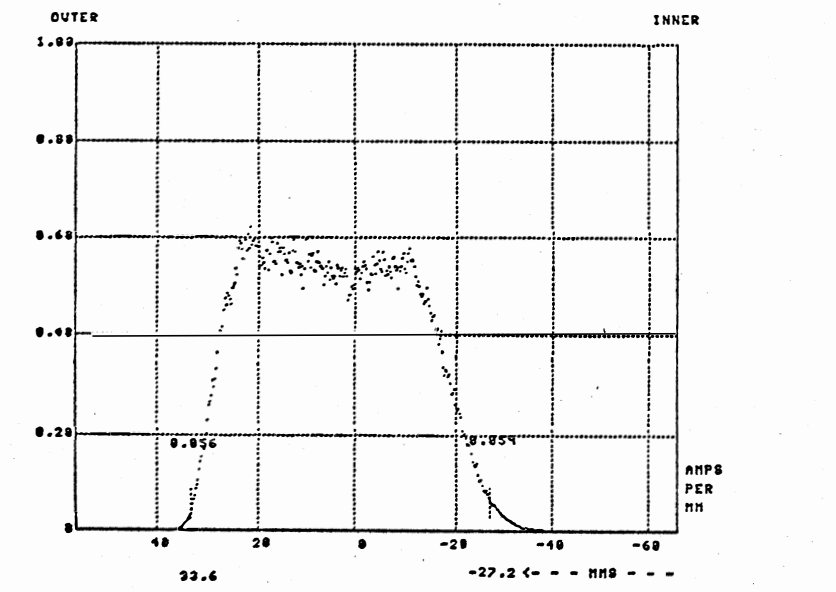


FIG 1


R2 TIME:16H52M44S DATE:77-09-26 RUN 882 WC= AC
I= 27.5072A GEV/C= 26.7236 WIDTH= 63.3MM C.OFC.= 4.1MM RMS WIDTH= 30.2MM
OUTER
INNER
1.00
0.80
0.60
0.40
0.20
0
0.057
0.056
AMPS PER MM
60
40
20
0
-20
-40
-60
31.4
-25.5 - - - MMS - - -


R2 TIME:17H19M28S DATE:77-09-26 RUN 882 WC= AC
I= 27.3960A GEV/C= 27.4224 WIDTH= 70.8MM C.OFC.= 4.9MM RMS WIDTH= 30.5MM
OUTER
INNER
1.00
0.80
0.60
0.40
0.20
0
0.057
0.057
AMPS PER MM
60
40
20
0
-20
-40
33.3
- - - MMS - - -


R2 TIME:17H31M37S DATE:77-09-26 RUN 882 WC= AC
I= 27.2939A GEV/C= 27.9131 WIDTH= 80.8MM C.OFC.= 4.8MM RMS WIDTH= 30.4MM
OUTER
INNER
1.00
0.80
0.60
0.40
0.20
0
0.056
0.059
AMPS PER MM
40
20
0
-20
-40
-60
33.6
-27.2 <- - - MMS - - -

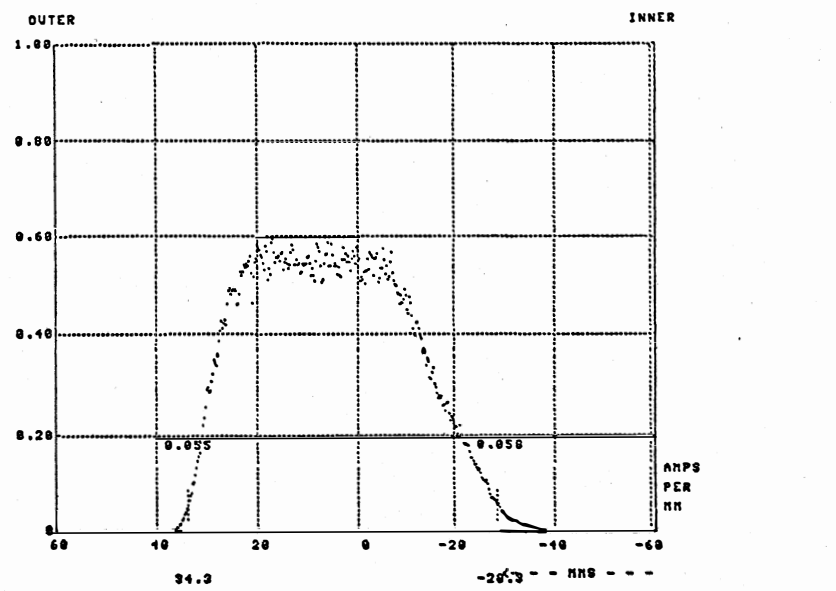
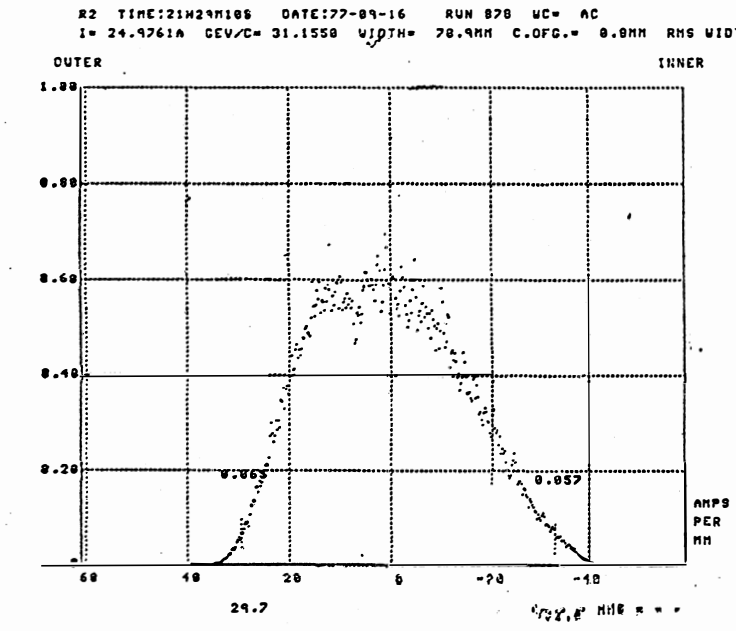

R2 TIME:18H09M27S DATE:77-09-26 RUN 882 WC= AC
I= 26.3132A GEV/C= 29.5883 WIDTH= 80.9MM C.OFC.= 5.5MM RMS WIDTH= 30.3MM
OUTER
INNER
1.00
0.80
0.60
0.40
0.20
0
0.055
0.058
AMPS PER MM
60
40
20
0
-20
-40
-60
34.3
- - - MMS - - -

FIG 2



S A/MM P MMS MMS I A/

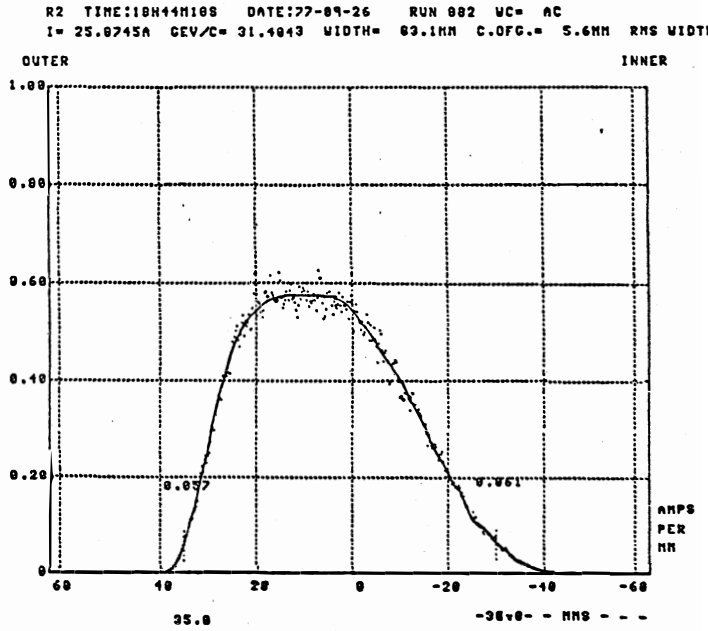


FIG 3