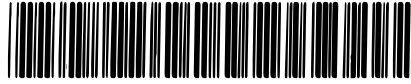


ISR-MA/CW/rh



22nd February 1974

CM-P00071729

ISR PERFORMANCE REPORTRun 415 - 21 February 1974Rings 1 and 2 - 26 to 31 GeV/c with SFMAcceleration to 31.44 GeV/c with separated beamsSummary

By separating the beams at the intersections, stacks of 3.148 A in R1 and 5.03 A in R2 at 31.44 GeV/c have been easily obtained. The experiment has shown that it is possible to get beams of 5 A x 5 A at 31 GeV/c.

Method and results

A stack of 8.1 A was made in R1. The acceleration to 31.44 GeV/c reduced the current to 3.6 A. In order to avoid beam-beam interaction during acceleration in R2, bumps of -5 mm were applied in every intersection using the program LUMS. Applying the bumps reduced the current to 3.284 A.

In R2, a stack of 9.97 A was made and bumps of +4.5 mm were applied before acceleration. From the starting current of 9.5 A at 26 GeV/c in R2, we were left with 5.05 A at 31 GeV/c.

The bumps were then removed from both rings with a loss of 0.136 A in R1 and of 0.020 A in R2.

Figure 1 shows the current losses in both rings during acceleration. The greater slope of the curve for R1 is probably due to a 'hung-up' during acceleration.

Quality of the stack at 31.4 GeV/c

The stacks were used in the following physics run. The luminosity in I5 was $0.34 \cdot 10^{30} \text{ cm}^{-2} \text{ s}^{-1}$ at the beginning of the run and $0.30 \cdot 10^{30} \text{ cm}^{-2} \text{ s}^{-1}$ 14 hours later, at the end.

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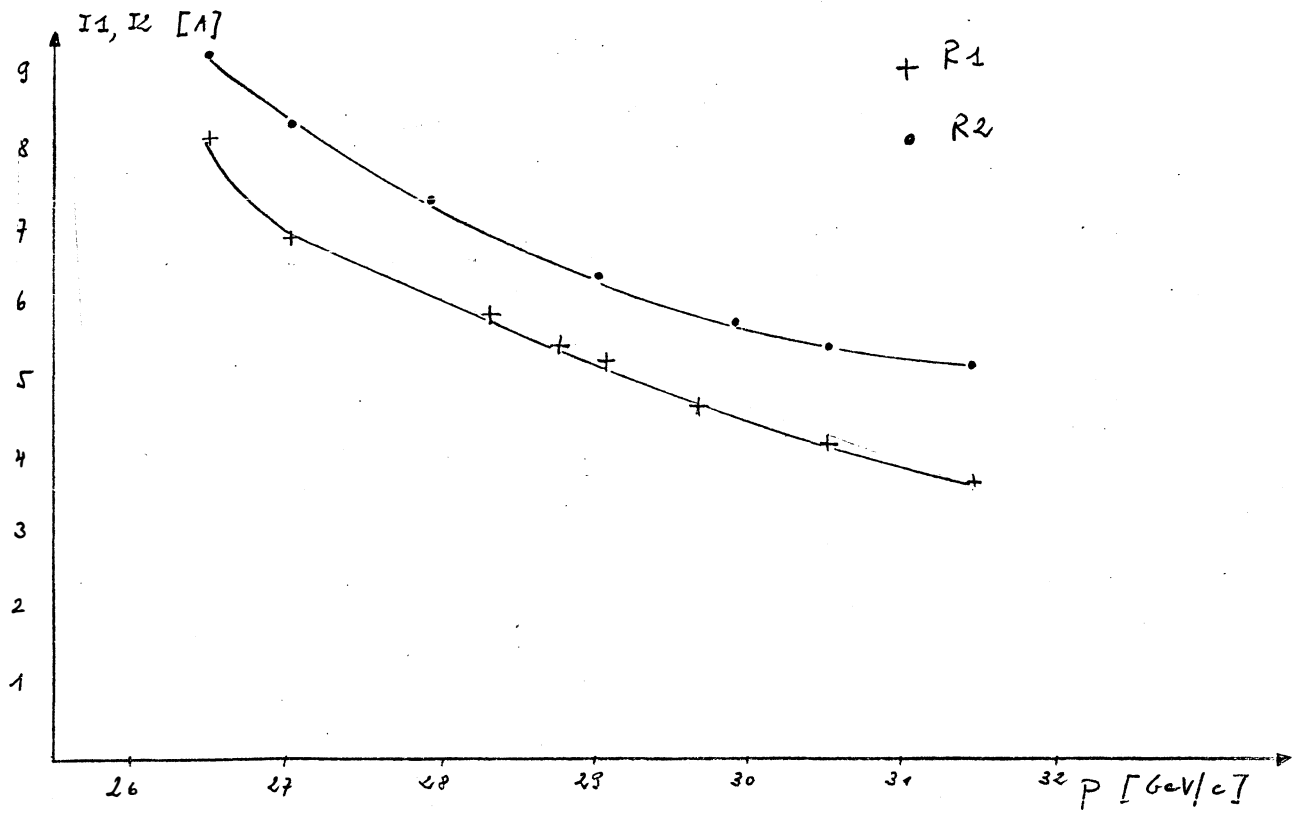


Fig. 1 Current losses in R1 and R2 during acceleration