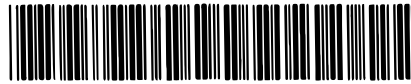


ISR-MA/KNH/rh



16th June 1971

CM-P00072534

ISR RUNNING-INRun 70 - 14 June 1971 - 16.45 to 18.30 hRing 1 - 15 GeV/c - 20 bunches

The purpose of the experiment was to establish a set of standard working conditions in Ring 1 at 15 GeV/c. Improved versions of CLEO and FATA were set up and filed in 15CL and 15FA, respectively.

Line 15CL

A straightened version of CLEO (1.5, 0) was established by adding to QC15 the following corrections:

$$\begin{aligned} \Delta Q_H &= 0.018 & \Delta Q_V &= -0.046 \\ \Delta Q'_H &= 1.5 & \Delta Q'_V &= 0.75 \end{aligned}$$

The quadrupole corrections

$$\Delta GL_F = 0.0574 \text{ T} \quad \text{and} \quad \Delta GL_D = -0.812 \text{ T}$$

were added by the poleface windings. The sextupole corrections by:

$$I_{SF} = 9.90 \% \quad \text{and} \quad I_{SD} = 7.15 \% .$$

The resulting working line is shown in Fig. 1. A beam loss of 45 % (37 % on return) was found outside the measured range at $r = 45 \text{ mm}$ crossing the resonance $2 Q_H + 2 Q_V = 35$ at 0.3 cm/sec.

A measurement of the closed orbit indicated a poor correction, so the CR-power supplies were switched off before stacking. The stack showed "brickwalls" at 3.39 A and at 3.45 A. The relative decay rate was $4 \cdot 10^{-4}/\text{min.}$ at 3 A.

The power supply settings are filed in "15CL" and are shown in Fig. 1.

Line 15FA

An improved version of FS15 was set up on the basis of measurements made in Ring 2 during run 50. The line is shown in Fig. 2. A beam loss of 6 % occurred when crossing the series of 5th order resonances. A further improvement based on measurements of the present run will be possible, if needed.

This working line was used by E. Fischer during the lifetime experiment. 3.5 A were stacked without showing signs of saturation or "brickwalls".

The power supply settings are filed in "15FA" and are shown in Fig. 2.

K.N. Henrichsen

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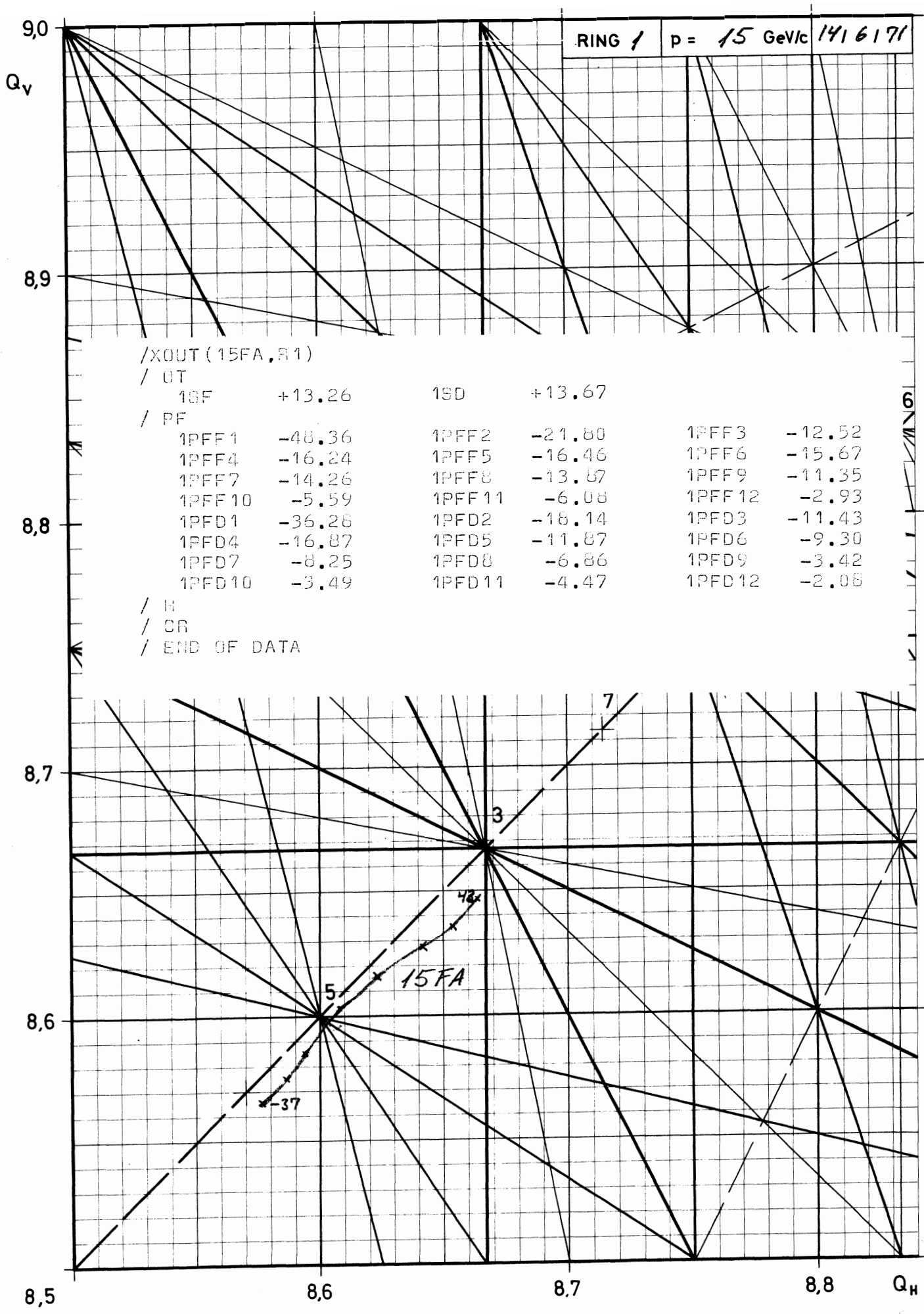


FIG. 2.