ISR RUNNING-IN

Run 99, 22GeV/c, 20 bunches, 22FA, 17.30 - 20.30h.

Continuation of pressure-versus-current study

1. Purpose

To investigate the evolution of pressure as a function of current and stack displacement, for both multiple and single stacks, and to look for correlation between beam loss and radius.

2. Conclusions

Because of a late start and unexplained difficulties in making multiple stacks and RF scans the conclusions are very limited.

(i) A stack of 5.25 A was made in two rather indeterminate parts. At an average pressure $<p> = 4.1 \times 10^{-10}$ the loss rate was $4 \times 10^{-5} \text{ min}^{-1}$; the pressure near a bump $P(349.7) = 1.62 \times 10^9$.

(ii) With a few more pulses added, an RF scan produced, as usual, a slight loss of current, a temporary reduction of $P(349.7)$ and its rate of subsequent rise.

(iii) Displacements of the stack to -5mm and then -10mm from starting point each resulted in very small current losses accompanied by pressure rises in $P(349.7)$, as in the figure.

(iv) An RF scan reduced $P(349.7)$ again, and returning the stack to 0mm produced appreciable beam loss and further pressure reduction.

(v) It still appears interesting to try to do this experiment again with everything functioning correctly.

Distribution:

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