Run 246, 30th October 1972, 12.00-16.00 h.

Ring 1, 22 GeV, 20 Hz

Radial Betatron amplitudes in stacks

Purpose

To resolve the ambiguities of the measurements in Run 236.

Conclusions

The radial betatron amplitudes do not now depend on the stacked current up to a level of 10 amps at least. The curious peaks observed in Run 236 on the inner edges of stacks are almost certainly due to RF spill-out.

Details

Four stacks (2 at 10A, 2 at 5A) and two single pulses were measured with the scrapers by the traditional method. To reduce RF spill-out to a minimum, suppressed buckets were not used. RF scans and pictures on the Vosicki monitor showed a higher density at the inner edge of the stack, together with a substantial tail (Figs 1 to 4).

The scraper scans were interpreted by measuring between the flanks rather than the peaks, and showed a beam amplitude corresponding to an emittance of about $2.5 \times 10^{-6}$ rad. m at twice r.m.s. amplitude. This was the same for stacks and single pulses, and there was very little difference between outer and inner flanks. Fig. 5 shows an example.

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