

ISR RUNNING-INRun 30, 26th February, first hoursStacking 20 bunches with the shutter, protected by the scraper

During run 29 the scraper in Ring 1 had been adjusted to protect the shutter of the inflector during the stacking. On several previous runs it had been observed that stacking 4 bunches with the shutter gave a very quiet stack for currents in the range 0.5A to 0.8A. The aim of the present experiment was to see if stacking 20 bunches with the shutter would give a quiet stack at higher currents.

We started with working point "Cleo", defined by $\Delta Q_H = 0.014$ and $\Delta Q_V = -0.038$ and with the sextupole excitation SF = 9%, SD = 3.3%. This working point had given excellent results with 0.7A during the first 6 hour night run for physics. Several stacking attempts were made and each time we met the brick wall in the range 1.1A to 1.3A.

At the advice of Resegotti the sextupole excitation was increased to SF = 20.6% and SD = 16.97%. With these settings it was easy to exceed 2A and the stacking was stopped at 2.17A. While this stack was made, the dump was $z = -6$ mm to catch as many protons as possible which were scattered by the scraper. The stack as made was rather noisy and had a decay rate of 2×10^{-3} per minute. When the dump was centered, the decay rate of the same stack decreased to 4×10^{-4} per minute. The counting rate on the rate meter from I5 was about 50 x beam-gas background. This is still much worse than for a stack of 0.7A made with four bunches. The reason is probably that due to the large sextupole excitation these are some higher order resonances in the radial aperture occupied by the stack.



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