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Controlling Beam Dumping

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Subject Controlling Beam Dumping

OBSERVATIONS AND CONCLUSION

Results

The H20 backleg windings were reconfigured to provide a 1/2 λ inside bump centered at I13. The beam was turned off 360 ms (~ 15 GeV/c) and the loss pattern noted. The bump turned on and raised to ~ 50A without changing the loss pattern. Raising the current another 20A moved 80-90% of the losses in the ring to the I13 region.

Conclusion

1) A small change (~ 1/4 cm) change in the location of an inside aperture completely can rearrange the loss pattern relative to the closed orbit of protons in the ring.

2) Small, low power bumps could be used to direct beam loss to a low penalty areas as necessary.