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Test of H20 Electrostatic Septum for SEB

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Studies Write-Up

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The slow beam was extracted using the electrostatic septum at H20 to reduce ejection losses.

The septum running at 60 kV/cm reduced losses in the F area by ≈ 60% and increased ejection efficiency by 6% after a crude optimization. Separation, losses, and efficiency were not dramatically affected by increasing the voltage to 80 kV. The H20 septum leakage current was below 10 μA with beam passing through the device.

The separation caused by the H20 septum was observed at F5. The separation disappeared when voltage was removed at H20. The separation tilted when the high field skew quads were turned off.

Lack of a loss monitor around the ring and at H20 did not allow optimization of losses. This test was conducted with beam intensities of ≈ 4×10^{12}.