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The ionization profile monitors in the recycler ring

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Ion profile monitors (IPM) are used to measure the beam size in synchrotrons. Both the Fermilab Recycler and Main Injector (MI) machines have IPMs. However, they were not well understood enough to provide confidence in their measurements. Accurately measuring beam size through the IPMs was crucial to recognize the loss mechanisms for accelerators and to keep the beam loss to a minimum. Thus, performing measurements with different parameters using the IPMs led to a better analysis on how changes in conditions affect the beam size. The IPM measurements are compared with that of multi-wires in the upstream transfer line after applying corrections. The results were compared with other diagnostics and the change in the beam size for different parameters are presented in this paper.

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Footnotes

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Yes

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