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ID: 3224 Design and Performance of the MICE Target

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Abstract The MICE experiment uses a beam of low energy muons to study ionisation cooling. This beam is derived parasitically from the ISIS synchrotron at the Rutherford Appleton Laboratory. A mechanical drive has been developed which rapidly inserts a small titanium target into the beam after acceleration and before extraction, with minimal disturbance to the circulating protons. One mechanism has operated in ISIS for over half a million pulses, and its performance will be summarised. Upgrades to this design have been tested in parallel with MICE operation; the improvements in performance and reliability will be presented, together with a discussion of further future enhancements.

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