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Study on spill quality and transit times for tune sweep slow extraction from SIS18

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The temporal quality on the 100 micro-second scale of the slowly extracted spill from GSI SIS18 is crucial for fixed-target experiments, which is influenced by the power supply ripples that act on the quadrupole magnets, causing temporal fluctuations, the so-called spill micro structure. Extensive simulations regarding the dependency of spill quality and transit time on the power supply ripples and beam parameters are executed. These results are compared to detailed beam-based measurements.

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