

## Spill structure with newly upgraded main magnet power supplies in J-PARC Main Ring

The main magnet power supplies for the J-PARC Main Ring were upgraded from 2021 to 2023. In addition to increasing the maximum voltage output to shorten the acceleration time from 3GeV to 30GeV, reducing the current ripples for improving the beam spill structure was also one of the major objectives of the power supply upgrade. Although good results were obtained in current ripple measurements during the power supply development stage, the expected reduction in the current ripple has not yet been achieved, and new problems have also come to light from the beam operation after the upgrade. In this talk, we will explain the current status of the spill structure in the slow extraction beam operation after upgrading the main electromagnet power supplies and plans.

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