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Development of a new high stability of power supply in the superconducting system

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This paper studies the use of a novel high stability of power supply used in superconducting system, this power supply with high stability, low output current ripple characteristics. Also, the slope slew of raising and failing were be change through the firmware in order to satisfy the operation of the system. The superconducting coil wingding has a total length magnetic period of 56.56cm, total magnet length of 478.9cm and vertical (horizontal) magnetic field of 18.7T. The operation principle and steady-state analysis of the proposed converter were discussed. Finally, a hardware prototype system with output current of 320 ampere was constructed in a superconducting laboratory of Taiwan Photon Light Source.

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