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## Servo-Power-Controller Design Based on EPICS

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**Abstract**—Based on the Experimental Physics and Industrial Control System (EPICS), a servo power controller is designed to be inserted into the existing power supply for testing its function of measurement and control in real time. The power supply controller uses double closed-loop feedback control, in which the outer-loop feedback control uses dead time modulation (DTM) technology to adjust the output current by tracking the external control signal. In this paper, the principles of the power supply and its controller are introduced, and the DTM method is studied and verified using MATLAB simulation and experiments to develop control technology for a tokamak power supplier.

### Eligible for student paper award?

Yes

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