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## Digital LLRF feedback control system for the J-PARC linac

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Twenty high power klystrons will be installed in the J-PARC linac. The rf fields are required to be stable less than  $\pm 1\%$  in amplitude and  $\pm 1$ deg. in phase. The digital feedback (FB) system using FPGAs are adopted so as to satisfy these requirements. External monitors using wave-detectors and mixers are utilized for confirming the stability. The measured stabilities are less than  $\pm 0.15\%$  in amplitude and  $\pm 0.15$  deg. in phase during the 500 $\mu$ s flat-top. A tuner control system was tested and 18-hour FB operation was also carried out.

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