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Direct RF sampling processor for cavity BPM system

Tuesday, 10 September 2024 16:00 (1h 30m)

Digital beam signal processor is critical for the beam diagnostic resolution and on-line application performance. High speed & high precision ADC, high performance FPGA are the key devices for the evolution of the processor. At present, ADC technology has entered the era of RF direct sampling, which bandwidth is up to 9 GHz, sampling rate is higher than 2 GSPS, and sampling bits is up to 14 bits. If the beam signal is sampled directly and processed with an FPGA, the beam diagnostic system structure will be much more concise and stable. In this paper, a developed direct RF sampling processor for beam diagnostic in SXFEL and SSRF will be introduced, and the first application on cavity BPM system will be shown.
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Footnotes

Funding Agency

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Yes

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