

Multi-bunch feedback system in USR

In ultra-low emittance ring for light source, hybrid filling of bunches and narrow gap undulators would contribute transverse instability. Under the hybrid filling, isolated bunch with high current and bunch train with high average current would be stored simultaneously. Mode coupling single bunch instability and multi-bunch instability due to resistive wall impedance must be suppressed by bunch-by-bunch feedback system in transverse plane. Since bunch current ratio in the hybrid filling would reach 2 orders of magnitude, an automatic attenuator which is sensitive to bunch current is developed at SPring-8 in order to avoid saturation in feedback processor. We will discuss effect of noise at BPM signal and signal processor of feedback system on effective beam size.

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