

Development of intra-bunch feedback system in J-PARC MR

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Decreasing beam loss is the key issue for upgrading to 750kW at J-PARC Main Ring (MR). Especially, suppression of transverse instabilities caused by internal bunch motion is the imminent problem. To suppress this motion and reduce the beam loss, new wideband (about 100kHz to 100MHz) transverse feedback system which can detect internal bunch motions and damp them is needed. This paper reports the current status of the new feedback system and the latest beam test results of the suppression of internal bunch motion at the injection flat bottom.

References

- [1] Y.H. Chin et al., HB2008, Nashville, August 2008, WGA01, p.40 (2008).
- [2] Y. Kurimoto et. al., DIPAC2011, Hamburg, May 2011, TUPD74, p482 (2011).
- [3] Y.H. Chin et al., 9th Annu. Meeting of Part. Accel. Society of Japan, Osaka, August 2012, WELR09, p.97 (2012).
- [4] O. Konstantinova et. Al. , IPAC2013 , Shanghai, May 2013, TUPWA009,p.1739 (2013)

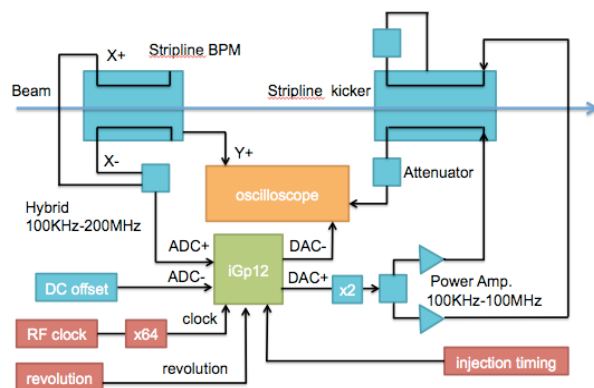


Fig. 1 Schematic view of intra-bunch feedback system