Non-mover based BBA in Extraction Line

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Measurement Method

1) *We can estimate the quadrupole center with respect to BPM center to compare the orbit difference with the optics model by changing the quadrupole strength.*

   - We can perform the BBA with a short beam time, but the error of the optics model makes the ambiguity of the quadrupole center position.

2) *We will measure the orbit difference by change the quadrupole strength for various beam orbits at the quadrupole with local bumps, and we can find the beam position with minimum orbit difference.*

   - We must prepare the program to make local bumps.
   - We will spend the 2 or 3 shift to measure the quadrupole center.

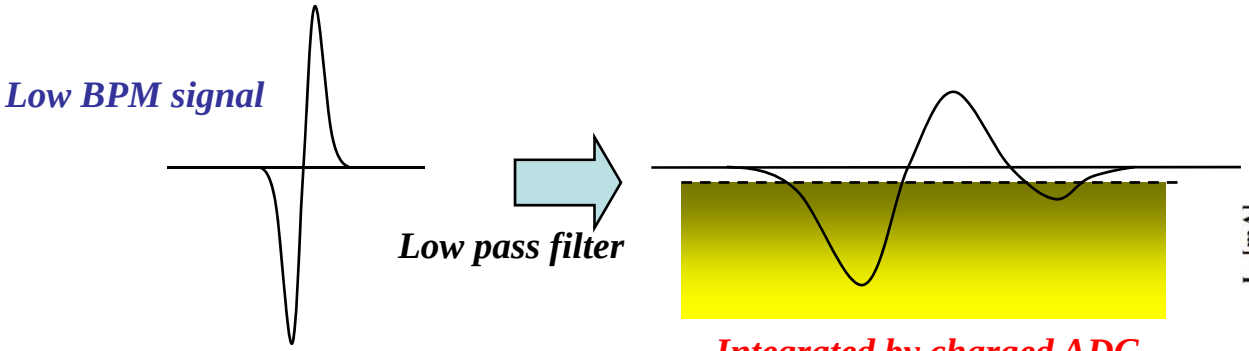
Hardware preparation

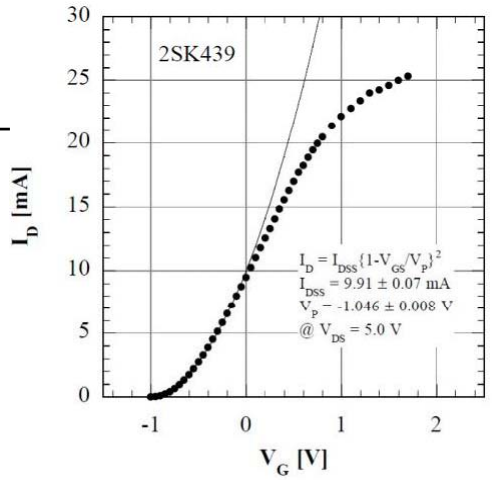
Stripline BPMs in new extraction line

Present stripline BPM readout electronics are still not calibrated, only displayed position from ADC counts as

$$x = S\,\frac{V_2 - V_4}{V_2 + V_4} \qquad y = S\,\frac{V_1 - V_3}{V_1 + V_3}$$

Calibration of the stripline BPMs will be done in 2009 January.





Example of the characteristics of the readout

Software preparation

1) "quadrupole–BPM response" program
will be ready around 2009 February.

2) "local bump" at extraction line
will be ready around 2009 February.

Fine Magnet Alignment

Sugahara-san will apply the fine magnet alignment of extraction and FF line in 2009 January.

Beam Test schedule

We will measure the BBA for stripline BPMs

- after the stripline BPM calibrations.

- after the extraction magnet fine alignment.

- after the optics modeling measurement in extraction line.

The first test will be done around 2009 February or March.