

# Longitudinal Feedback Commissioning at BEPC-II

Yue Jun-Hui<sup>1</sup>, M. Tobiyama<sup>2</sup>, Zhou Zhe-Ran<sup>3</sup>, Sui  
Yan-Feng<sup>1</sup>, D. Teytelman<sup>4</sup>, et. al.

<sup>1</sup>IHEP, Beijing, China

<sup>2</sup>KEK, Tsukuba, Japan

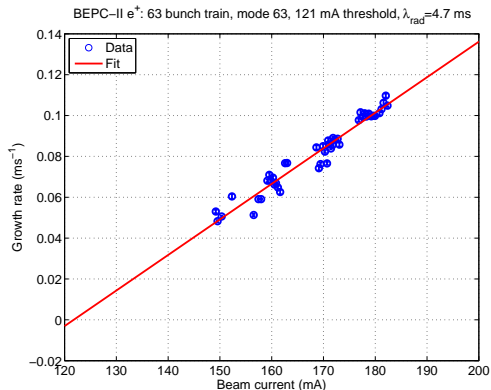
<sup>3</sup>NSRL, Hefei, Anhui, China

<sup>4</sup>Dimtel, Inc., San Jose, CA, USA

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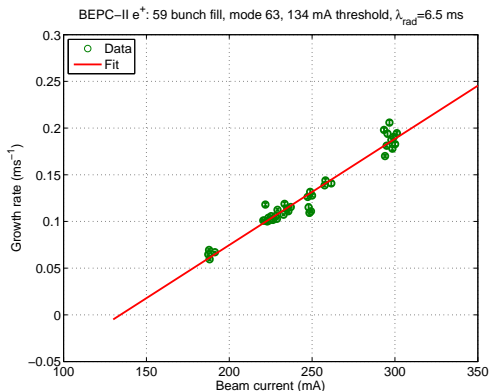
# Growth Rates: $e^+$



- 63 bunches in one train;
- Threshold underestimated - observed 133 mA.



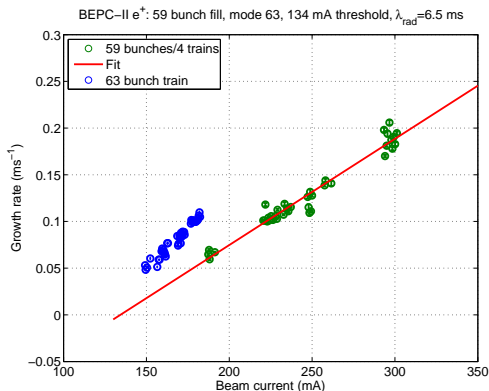
# Growth Rates: $e^+$ (Continued)



- Four trains, 59 bunches total;
- Threshold estimated quite nicely;
- Extrapolate to  $0.98 \text{ ms}^{-1}$  at 1 A;
- Clear difference from one train fill pattern.



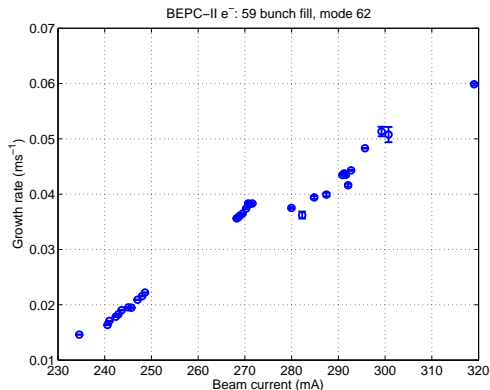
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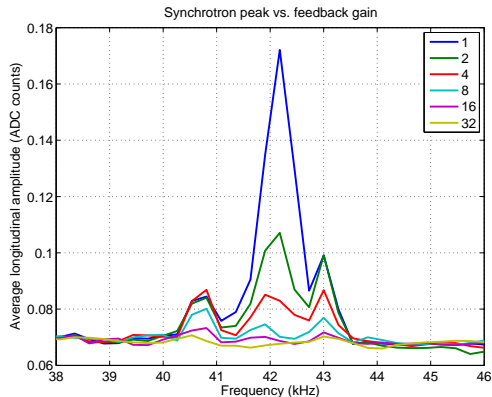
# Growth Rates: $e^-$



- Four trains, 59 bunches total;
- Impedance change or fill pattern?
- Change happens after filling from 268 to 300 mA.



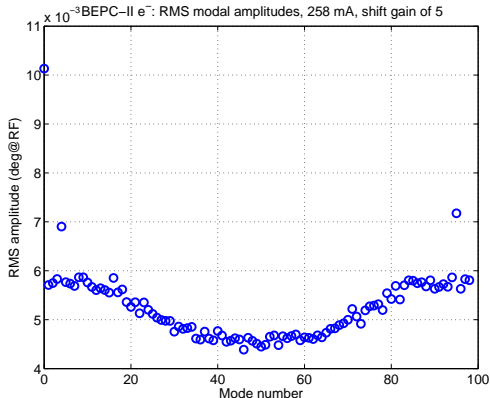
# Residual Oscillation



- Electron ring at 258 mA;
- Beam motion recorded with feedback on;
- Quadratically averaged bunch spectra.



# Residual Oscillation vs. Mode



- Residual amplitude of mode 0 corresponds to 55 fs RMS;
- High suppression of external excitations thanks to good kicker and 200 W of amplifier power.

