Longitudinal Mode-by-Mode Feedback System for The J-PARC Main Ring

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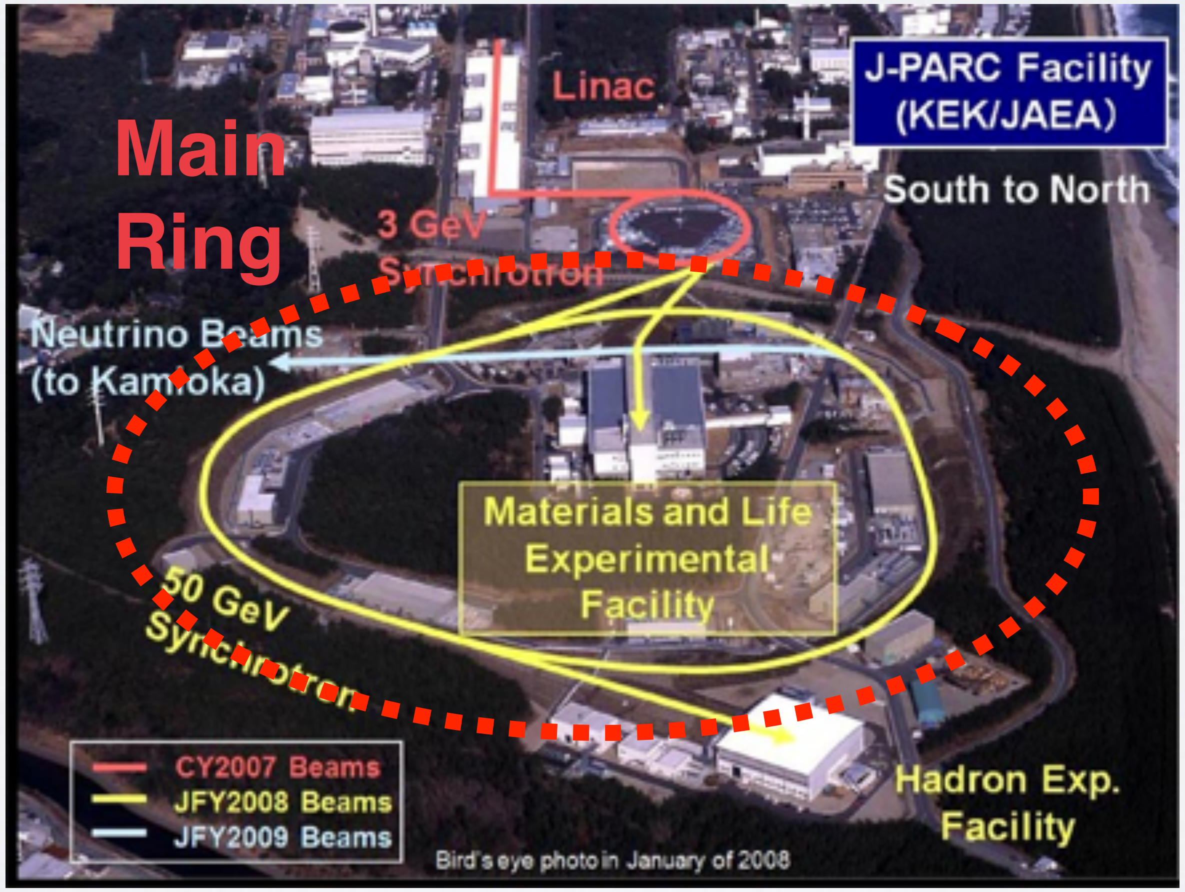

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Coupled Bunch Instability in J-PARC MR

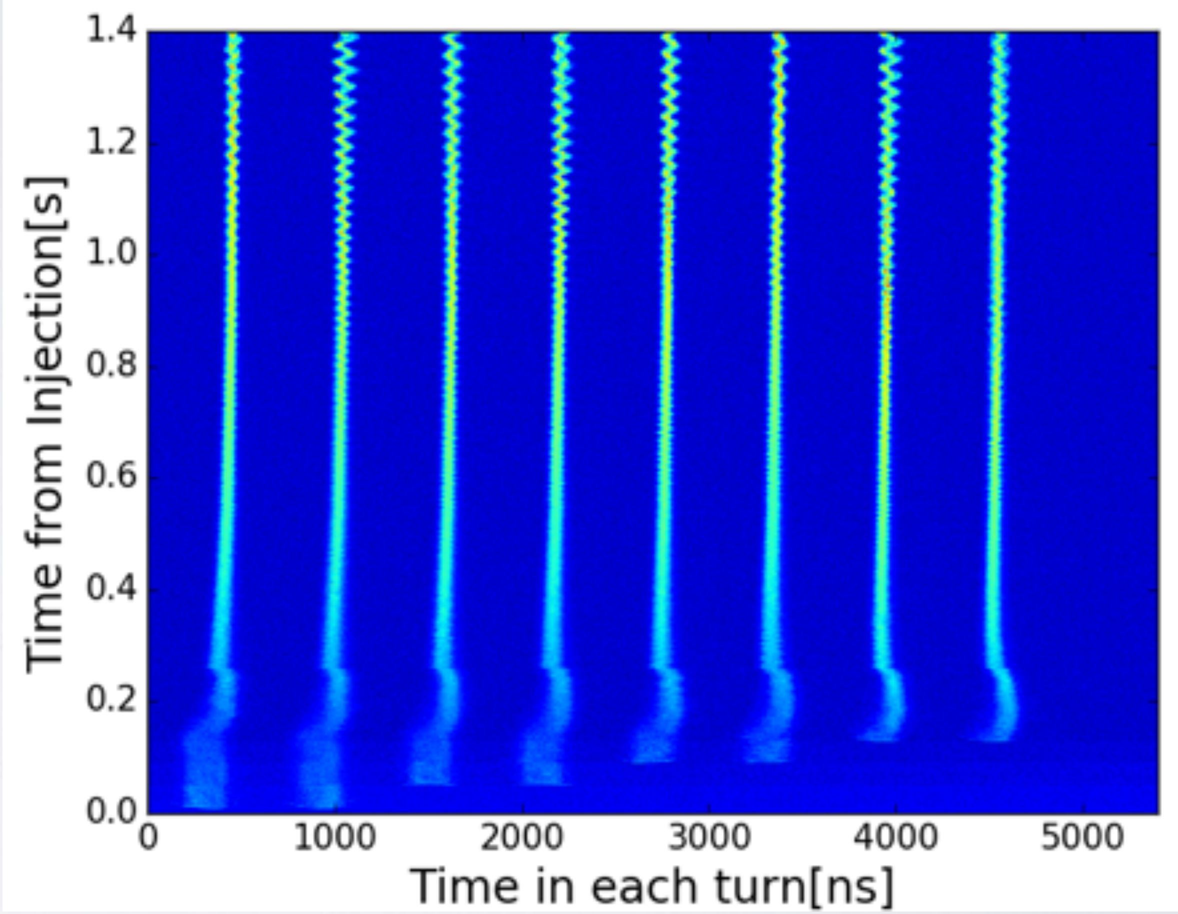
- Longitudinal Oscillation becomes serious in the J-PARC Main Ring (MR)

  ➡Coupled Bunch (CB) Instability

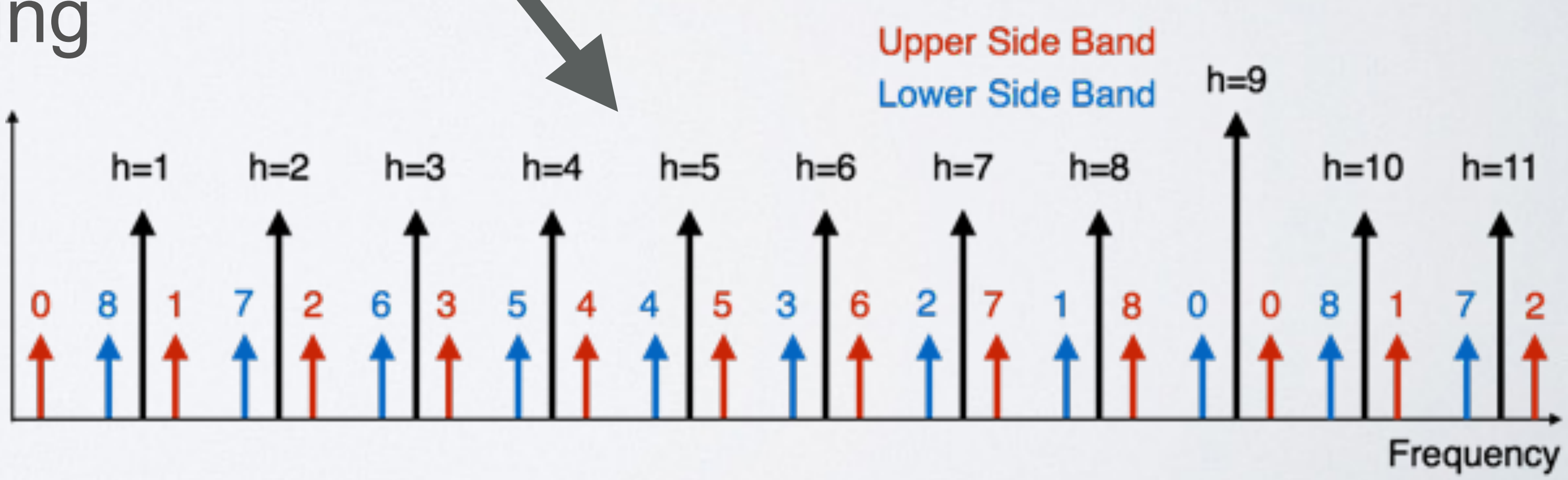
- Oscillation appears as sidebands in the spectrum of the beam signal.

  ➡Control these sidebands with Feedback to suppress the oscillation

    ➡Requires Sideband filtering



Beam Oscillation In J-PARC MR



The CB modes spectrum for the J-PARC MR.
(h=1: revolution frequency)

Poster

- Overview of J-PARC MR and CB instability
- Detail of Feedback system and its processor.
- Result of the preliminary beam measurement