Beam Dynamics Techniques


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Drive-damp Measurements of Different Coherent Modes for Bunches Within the Train

Method
1. Obtain Bunch-by-bunch data with a single BPM button, connecting through the detector and on to a Stripline kicker to the BPM. By selecting the appropriate PMT and PMT dynamics, the signal is amplified to the appropriate level for the BPM to digitize.
2. The signal from the detector is used to activate the BPM, exciting the bunch in the same manner as the measurements of the bunches within the train.
3. The bunch signal is displayed on the oscilloscope and the signal level is adjusted to allow for the signal to be fed to the feedback system.
4. After adjusting the signal, the signal is input to the feedback system. In the current system, only two modes of excitation are available.

Tune Shift Measurements by Defecting the Entire Train with Finger Magnets

Tune Shift Measurements by Observing "Notches" in a Bunch's Spectrum When Bunch-by-bunch Feedback Is Applied

Self-excited Spectrum of Single Bunches Within the Train

Conditions for Driving a Single Bunch

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