***time***

Flattop

**The emergency kickers can be triggered by MPS**

**Phase shift**

Step 1

DM starts B2B

Switch off beam feedback loops

Step 2

Collect data locally

Step 3

Gather data from two rings

RF phase shift method

Step 4

* Calculate synchronization window for both rings and DM
* Reproduce the bucket label signal
* Shift rf phase on one (or both) rf systems

Step 5

Generate kicker trigger signal

Step 6

Fire injection and extraction kickers

**Frequency beating method**

Step 1

DM starts B2B

Switch off beam feedback loops

Step 2

Collect data locally

Step 3

Gather data from two rings

Step 4

* Calculate synchronization window for both rings and DM
* Reproduce the bucket label signal

Step 5

Generate kicker trigger signal

Step 6

Fire injection and extraction kickers

**Synchronization**

**window**

f + **Δfrf**

***RF frequency***

f

**Frequency**

**detune**

***Δfrf***