

## LHC MD110

### Improved off-momentum loss maps requested by belen

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**Merit:** Establish a new configuration of RF frequency changes to ensure sufficient losses in IR3 for off-momentum loss map qualification without dumping the beam. This aspect limited severely the duration of machine validation during Run1.

**MD contact person:** B. Salvachua, D. Mirarchi

**MD procedure link:** To be Done (To be Done)

**Category:** Normal MD

**Beam:** Both

**Participants:** Collimation Team, BLM team, RF team

**OP contact person:** B. Salvachua

**Description:** During qualification of collimator settings the main limitation in terms of machine time is the execution of off-momentum loss maps and asynchronous beam dump. current off-momentum lossmaps are done by changing the RF frequency by a large amount ( $\pm 500$  Hz) in order to ensure that most of the beam is lost in IR3. This method dump beam after each off-momentum qualification loss map. We propose to change this frequency in smaller steps so that we can validate a method to perform the off-momentum loss maps without dumping the beam. MD request if not done as OP development (2-3 fills)

**Time required (Hours):** 12

**Beam energies:**

- Flat top

**Optics:** Top Energy, Squeezed

**Optics change:** No

**Orbit change:** No

**Collimation change:** No

**RF system change:** No

**Feedback change:** No

**What else should be changed:** Trims of the RF frequency

**Are parallel studies possible?:** No

**More information on parallel studies?**

**MD requester is ready?** Yes

### Beam parameters

**Bunch intensity ( $10^{11}$  ppb):** 1.1

**Number of bunches:** 3

**Transverse emittance ( $\mu\text{m}$ ):** 3.75

**Bunch length:** 1

### MD status

**Time slot assigned?:** No

**Assigned duration:**

**Status:** Requested

**Coordinator MD readiness:**

**MP classification:** A

**MP approval:** No

**rMPP approval:** Yes

**Need 2 extra hours for ramp down:** No