

# LHC MD69

## IR2 aperture measurements at 6.5 TeV requested by phermes

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**Merit:** For the upcoming LHC heavy-ion run it is intended to reduce the beta\* in IR2 down to values as small as 0.5m. For this challenging task it is crucial to have knowledge about the dimensions of the available triplet aperture, as the transverse beam dimensions in collision mode are largest in the triplet magnets and increase with decreasing beta\*. Thus, the measurements of the available aperture will give information about the achievable beta\*.

**MD contact person:** P. Hermes

**MD procedure link:** The full procedure is explained at <https://cds.cern.ch/record/1595801?ln=ca>. (The full procedure is explained at <https://cds.cern.ch/record/1595801?ln=ca>.)

**Category:** Normal MD

**Beam:** Both

**Participants:** Collimation team, J. Jowett, T. Mertens

**OP contact person:** B. Salvachua

**Description:** It is proposed to measure the available triplet aperture in IR2 by applying local bumps on blown up beams with different TCT settings. The full procedure for this technique that combined orbit bumps and collimator scans, as tested in Run1, is given in <https://cds.cern.ch/record/1595801?ln=ca>. The available aperture shall be measured on both sides of the IP. The ADT system is going to be used to make sure the beam fills the space between to collimator jaws. As it was done in 2012, we propose to measure the aperture at lower beta\* in IR2 so this MD might be coupled with other work from the optics team.

**Time required (Hours):** 6

**Beam energies:**

- Flat top

**Optics:** Flat top followed by Squeeze in IR2

**Optics change:** Yes

**Orbit change:** Yes

**Collimation change:** Yes

**RF system change:** No

**Feedback change:** No

**What else should be changed:**

**Are parallel studies possible?:** No

**More information on parallel studies?**

**MD requester is ready?** Yes

## Beam parameters

**Bunch intensity (10<sup>11</sup> ppb):** 1.2 and 0.5

**Number of bunches:** 1 nominal + several pilots

**Transverse emittance (um):** 3.5 or smaller, to be blown up

**Bunch length:** Nominal

## 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