Minutes of the 14th Collimation Upgrade Specification Meeting

Participants: C. Adorisio (CA), R. de Maria (RdM), S. Fartoukh (SF), L. Lari (LL), A. Marsili (AM) (scientific secretary), D. Mirarchi (DM), S. Montesano (SM), S. Redaelli (SR) (chairman),
Remote: A. Faus (AF), T. Markiewicz (TM), J. Molson (JM), H. Rafique (HR).

Indico event here.

1 Update on ATS optics tracking simulations Update on TCL scans and debris tracking simulations (A. Marsili)

Slides are available here and there.

1.1 Summary of the presentation

AM presented the last updates on the halo tracking simulations with ATS optics. First, AM quickly presented the ATS optics, the main differences with the nominal one, and the simulation settings. The main update on the simulation setting is the aperture file used in post-processing. This improved the resulting loss maps at expected areas, in the triplets. It showed a new possible limitation area: the arc 81, where some loss peaks are at the level of the losses in the dispersion suppressor right of IR7.

The peaks in arc 81 will be investigated: in which plane they appear, the local transverse distributions, and if they correspond to specific values of the twiss functions [**Action: AM**].

AM then presented the simulations of the tracking of debris from IP1. The goal is to reproduce the TCL scans performed earlier this year. A quick reminder of the results of these measures was given.

Then, the simulations were presented: they show a qualitatively good agreement with the measures. The point of highest losses starts in cell 9, and gets closer to the TCL as this one opens. Summing the losses for each cells shows behaviours similar to the BLM losses, but a more precise way to reproduce the BLM signals is still to be implemented.

A specific version of SixTrack recording all trajectories was used for the first turn of tracking, showing that the losses in the dispersion suppressor are due to particles with high dp/p.

1.2 Discussion

JM asked which version of the ATS optics was used here: V3.1b. RdM presented a plot of the n_1 parameter in the arc 8–1, to check for any aperture limitation. The simulation model must be updated with the new survey [**Action: SR**].