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Tune shift measurements: scan with chromaticity

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Tune shift measurements have been performed on two different cycles, allowing calculation of the vertical impedance at the kinetic energy of 7, 13 and 25 GeV. The scans have been performed changing the intensity from about $60 \cdot 10^{10}$ ppb to $250 \cdot 10^{10}$ ppb.

To perform the vertical impedance scan with chromaticity, we measured tune shift on the flat plateau of two different cycles, with different energies, changing the chromaticity on the working point. We set a different value of chromaticity on the working point before starting the tune shift scan with intensity. We performed a chromaticity measurement before each scan, to obtain an accurate evaluation of the parameter.

The calculated impedance varies in a range and increases for higher values of chromaticity. We observed the same behaviour for the three energies that we considered.

Additional measurements, in particular the scan at the injection energy of 2 GeV, where we expect to observe the space charge contribution, are in plan for next week.



