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Impedance and instabilities – Nicolas Mounet

In this talk we evaluate the impedance of the LHC in 2015 and the corresponding stability situation, up to the beginning of the squeeze, for various beam and machine parameters. As a starting point we use the current knowledge of the machine in terms of observed limits in single-beam operation, or in physics operation up to the beginning of the squeeze, and rescale them thanks to simulations and the impedance model obtained for the possible collimator settings scenarios. We also evaluate the possibility to mitigate instabilities thanks to the use of larger secondary collimator half-gaps, as well as an optimization of the chromaticity.