

“What you get” – RF system

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Abstract

This talk will present the lessons learned through the RF system performance and improvements in 2012, the RF plans for LS1, and the possible limitations on RF performance past LS1. An emphasis will be placed on expected operation limits for operation with 25 ns bunch spacing, at 6.5 TeV, and/or with higher beam currents. Studies performed to improve understanding (single bunch and multi bunch intensity limits, beam spectrum and relation to heating) and to evaluate mitigation techniques for these limits will be described. Development plans on new equipment will be discussed. Of particular importance are the cavity set-point modulation technique, which significantly reduces the klystron forward power requirements, the longitudinal damper, batch-by-batch blow-up at injection, and the RF frequency cogging, essential for p-Pb operation.