Physics > Instrumentation and Detectors

# Instrumentation2: Other instruments, ghost/satellite bunch monitoring, halo, emittance, new developments

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In order to estimate in absolute terms the luminosity of LHC certain beam parameters have to be measured very accurately. In particular the total beam current and the relative distribution of the charges around the ring, the transverse size of the beams at the interaction points and the relative position of the beams at the interaction point. The experiments can themselves measure several of these parameters very accurately thanks to the versatility of their detectors, other parameters need however to be measured using the monitors installed on the machine. The beam instrumentation is usually built for the purpose of aiding the operation team in setting up and optimizing the beams, often this only requires precise relative measurements and therefore the absolute scale is usually not very precisely calibrated. The luminosity calibration requires several machine-side instruments to be pushed beyond their initial scope.

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