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Luminosity measurement at ATLAS with Roman Pots and Scintillating Fibre Detectors

This contribution will report about the ATLAS Luminosity measurements using a Scintillating Fibre Detector in a Roman Pot system. A description of the Roman Pot system will be made together with a description of the development, construction and operation of ALFA (Absolute Luminosity For ATLAS) scintillating fibre detector prototypes. The ATLAS Roman Pots will be located at 240 m from the ATLAS interaction point at LHC. The constraints on the precise positioning of the detector will be illustrated as well as the good results from two beam tests carried out at DESY (2005) and at CERN (2006). The test beam data proved the good resolution and efficiency of the fibre detectors making them suitable for the precision measurements foreseen. The contribution will also discuss about the limited space available for the electronics and the very compact system developed for the readout of multi-anode photomultipliers.

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