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The ATLAS Diamond Beam Monitor

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After the first three years of the LHC running the ATLAS experiment extracted its pixel detector system to refurbish and re-position the optical readout drivers and install a new barrel layer of pixels. The experiment has also taken advantage of this access to also install a set of beam monitoring telescopes with pixel sensors, four each in the forward and backward regions. These telescopes were assembled based on chemical vapour deposited (CVD) diamond sensors to survive in this high radiation environment without needing extensive cooling. This talk will describe the lessons learned in construction and commissioning of the ATLAS x Diamond Beam Monitor (DBM). We will show results from the construction quality assurance tests, commissioning performance, including results from cosmic ray running in early 2015 and also expected first results from LHC run 2 collisions.

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