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[B10] ATLAS ITk Strip Sensor quality control and review of ATLAS18 pre-production sensor results

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With the upgrade of the LHC to the High-Luminosity LHC (HL-LHC), the Inner Detector will be replaced with the new all-silicon ATLAS Inner Tracker (ITk) to maintain tracking performance in a high-occupancy environment and to cope with the increase in the integrated radiation dose.
Comprising an active area of $165\,\mathrm{m}^2$, the outer four layers in the barrel and six disks in the endcap region will host strip modules, built with single-sided micro-strip sensors and glued-on hybrids carrying the front-end electronics necessary for readout.
The strip sensors are manufactured as n^+-in-p strip sensors from high-resistivity silicon in 8 different shapes, from square in the barrel staves to a stereo annulus wedge-shape in the endcap discs, developed to withstand a total fluence of $1.6 \times 10^{15}\ \mathrm{n_{eq}/cm^2}$ and a total ionising dose of $66\ \mathrm{MRad}$.
In 2020 the ITk Strip Sensors project has transitioned into the pre-production phase, where 5% of the overall volume, a total of 1101 ATLAS18 wafers, was produced by Hamamatsu Photonics.
Before being shipped out for module building, the ATLAS18 main sensors were tested at different institutes in the collaboration for mechanical and electrical compliance with technical specifications, the quality control (QC), while fabrication parameters were verified using test structures from the same wafers, the quality assurance (QA).
The sensor QC evaluation program, test results and statistics, as well as experience gained from pre-production will be summarised in this contribution.

contact person e-mail

christoph.klein@cern.ch

Primary author: KLEIN, Christoph Thomas (Carleton University (CA))

Co-authors: KELLER, John Stakely (Carleton University (CA)); Mr STAATS, Ezekiel (Carleton University (CA)); JESSIMAN, Callan (Carleton University (CA)); KOFFAS, Thomas (Carleton University (CA)); SOLDEVILA SERRANO, Urmila (IFIC/CSIC-UV); SOLAZ CONTELL, Carles (IFIC / CSIC-UV); LACASTA LLACER, Carlos (IFIC/CSIC-UV); BERNABEU VERDU, Jose (IFIC (CSIC-UV)); Dr BECK, Graham (University of London (GB)); BEVAN, Adrian (Queen Mary University of London (GB)); DAWSON, Ian (University of London (GB)); Dr MIYAGAWA, Paul (University of London (GB)); ZENZ, Seth (Queen Mary University of London); BEAUPRE, Scott Lee (Simon Fraser University (CA)); FERNANDEZ-TEJERO, Javier (Simon Fraser University (CA)); FOURNIER, Andrew (Simon Fraser University (CA)); GREIG, Graham George (Simon Fraser University (CA)); POLEY, Luise (Simon Fraser University (CA)); STACK, Tynan Louis (Simon Fraser University (CA)); STELZER, Bernd (SFU/TRIUMF); UNNO, Yoshinobu (High Energy Accelerator Research Organization (JP)); NAKAMURA, Koji (High Energy Accelerator Research Organization (JP)); MIKESTIKOVA, Marcela (Czech Academy of Sciences (CZ)); KROLL, Jiri (Czech Academy of Sciences (CZ)); LATONOVA, Vera (Czech Academy of Sciences (CZ)); KVASNICKA, Jiri (Czech Academy of Sciences (CZ)); FEDERICOVA, Pavla (Czech Academy of Sciences (CZ)); ZATOCILOVA, Iveta (Charles University (CZ)); ULLAN, Miguel (CNM-Barcelona (ES)); HARA, Kazuhiko (University of Tsukuba (JP)); HIROSE,

Shigeki (University of Tsukuba (JP)); ISHII, Tatsuya (High Energy Accelerator Research Organization (JP)); SAITO, Kota (University of Tsukuba (JP)); KANG, Nathan Jihoon (University of California,Santa Cruz (US)); DOWLING, Andrew Jay (University of California,Santa Cruz (US)); MARTINEZ-MC KINNEY, Forest (University of California,Santa Cruz (US)); AFFOLDER, Kirsten (University of California,Santa Cruz (US)); AFFOLDER, Tony (University of California,Santa Cruz (US)); FADEYEV, Vitaliy (University of California,Santa Cruz (US))

Presenter: KLEIN, Christoph Thomas (Carleton University (CA))

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