

## Performance Evaluation of Stitched Passive CMOS Strip Sensors

*Wednesday, 2 March 2022 11:35 (20 minutes)*

Future particle physics experiments are motivated by the increase in luminosity and thus the need for intelligent tracking detectors providing fast track and momentum information to select events of interest. The next generation tracking detectors are mostly all silicon detectors and thus finding a cost effective solution to maximise the output is important. Commercial CMOS technology for silicon strip sensors is a prime candidate, which allows the use of large and high-resistive wafers and also provides the advantage of widely established industrial production processes.

The passive CMOS silicon strip sensors presented in this contribution is processed by a European foundry, in a 150 nm CMOS technology. The sensor have three different strip design to study in two different lengths and are formed by stitching of individual reticles. This study presents the probe station measurement and test beam results of the sensors before and after irradiation.

**Primary authors:** RODRIGUEZ RODRIGUEZ, Arturo (Albert Ludwigs Universitaet Freiburg (DE)); SPERLICH, Dennis (Albert Ludwigs Universitaet Freiburg (DE)); GREGOR, Ingrid-Maria (DESY & Bonn University); ARLING, Jan-Hendrik (Deutsches Elektronen-Synchrotron (DE)); WEINGARTEN, Jens (Technische Universitaet Dortmund (DE)); DIEHL, Leena (Albert Ludwigs Universitaet Freiburg (DE)); HAUSER, Marc (Albert Ludwigs Universitaet Freiburg (DE)); BASELGA, Marta (Technische Universitaet Dortmund (DE)); SHARMA, Surabhi (Deutsches Elektronen-Synchrotron (DE)); MÄDGEFESSEL, Sven (Albert Ludwigs University of Freiburg); HEMPEREK, Tomasz (University of Bonn (DE)); PARZEFALL, Ulrich (Albert Ludwigs Universitaet Freiburg (DE))

**Presenter:** SHARMA, Surabhi (Deutsches Elektronen-Synchrotron (DE))

**Session Classification:** CMOS

**Track Classification:** CMOS