



Contribution ID: 59

Type: **not specified**

Diamond Module Prototypes for the ATLAS SLHC Pixel Detector

Tuesday, 23 September 2008 17:10 (25 minutes)

Summary

The ATLAS collaboration has recently approved an R&D into the development of diamond pixel modules as an option for the ATLAS pixel detector upgrade for the SLHC. This R&D is possible as a result of significant progress in three areas: the recent reproducible production of high quality diamond material in wafers, the successful completion and test of the first diamond ATLAS pixel module, and the operation of a diamond sensor material that had been exposed to a fluence of 1.8×10^{16} protons/cm². This talk will summarize the progress in each of these areas and describe our plans to build and characterize a number of diamond ATLAS pixel modules, test their radiation hardness, explore the cooling advantages made available by the high thermal conductivity of diamond and demonstrate industrial viability of bump-bonding of diamond pixel modules .

Co-author: TRISCHUK, William (University of Toronto)

Presenter: MIKUZ, Marko

Session Classification: Mechanical Aspects of Pixel Detectors and Upgrades