## Test of COFFEE2, the first 55nm High Voltage CMOS sensor prototype

To meet the increasingly demanding requirements of future tracking detectors for the LHCb Upgrade II and the future Circular Electron-Positron collider, advanced detector technologies with enhanced hit density processing capabilities and superior radiation tolerance are essential. To study the sensor performance and electronic response in the next generation process of HV-CMOS, a sensor chip, COFFEE2, is designed and tested. This poster will present the test results of COFFEE2, which is the first 55nm HV-CMOS sensor prototype in high energy physics. Charge injection and red laser are used to test the in-pixel circuit functionality and their uniformity in pixel array. Radioactive sources are used to study the sensor performance in comparison with TCAD simulation.

## Workshop topics

Sensor materials, device processing & technologies

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