



Contribution ID: 61

Type: ORAL

## Characterization of the prototype CMOS pixel sensor JadePix-1 for the CEPC vertex detector

*Thursday, 13 December 2018 12:25 (25 minutes)*

The proposed Circular Electron Positron Collider (CEPC) will allow measurement of the Higgs properties with precision beyond the (HL-)LHC. To meet the stringent physics requirements, its vertex detector will have to be constructed with the state-of-the-art pixel detector technologies that promise high spatial resolution, low power consumption and low material budget. We have conducted R&D based on the emerging CMOS pixel sensor technology and developed the first prototype JadePix-1. In this talk, we will describe the sensor structures that are primarily designed to verify the impacts of diode geometry on charge collection. We will present the detailed test results obtained with radioactive sources and electron test beams, and the sensor performance before and after neutron irradiation up to  $10^{13}$  1 MeV  $n_{eq}/\text{cm}^2$ .

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**Session Classification:** Pixel sensor monolithic

**Track Classification:** Pixel sensor technology