Contribution ID: **202** Type: **Poster**

P1.41: Prototype Design of the Monolithic Active Pixel Sensor for Electron-ion collider in China

Monday, 26 June 2023 15:31 (1 minute)

An Electron-ion collider in China (EicC) will be constructed as a future high-energy nuclear physics project. The vertex and tracking detectors are based on the Monolithic Active Pixel Sensor, which must simultaneously measure time, position, and energy. In addition, the MAPS is expected to be implemented with a commercial process, given the cost. Therefore, a MAPS called Nupix-R1 is developed in a 130 nm twin-well process for EicC, which consists of 128 x 128 pixels and can measure energy, time, and position. In addition, this MAPS can also record only hit position and reach a fast readout speed, according to the requirements of different detector layers. The Nupix-R1 is NMOS-only to avoid competition between N-wells containing PMOS and charge collection diodes.

Primary authors: Ms HE, Rui (Institute of Modern Physics, Chinese Academy of Sciences); Ms HUANG, Ju (Institute of Modern Physics, Chinese Academy of Sciences); Mr YIN, Rui (Institute of Modern Physics, Chinese Academy of Sciences); Dr ZHOU, Wei (China Electronics Technology Group Corporation 58th Research Institute); Dr HAN, Weijia (Institute of Modern Physics, Chinese Academy of Sciences); Dr NIU, Xiaoyang (Institute of Modern Physics, Chinese Academy of Sciences); Prof. ZHAO, Chengxin (Institute of Modern Physics, CAS)

Presenter: Ms HE, Rui (Institute of Modern Physics, Chinese Academy of Sciences)

Session Classification: Poster (incl. coffee)