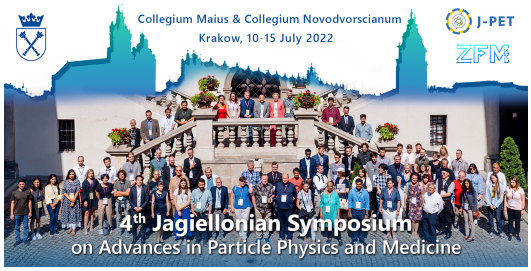

Contribution ID: **307** Type: **not specified**

Unsupervised learning for pixel mask clustering and cluster tracking in LHCb's Velopix sensor calibration

Thursday, 14 July 2022 15:55 (15 minutes)

The VELO detector is one of the core elements of the LHCb spectrometer. Its upcoming upgrade will consist of a new type of Velopix sensor. It branches from a Medipix family of silicon pixel matrix sensors. One of its operational challenges with future data taking at the Large Hadron Collider will be the ability to detect faulty (masked) pixels and monitor them. In this work, we propose a method for clustering the faulty pixels and tracking the progression of the clusters in time. We compare two methods of clustering (DBSCAN and OPTICS) and their influence on the proposed tracking method, using a simulated dataset of masked pixels.

Publication agreement (CC BY 4.0)

Presenter: MAJEWSKI; AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY, POLAND, Maciej

Session Classification: Session 4