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The CGEM-IT of the BESIII detector

BESIII is a spectrometer hosted at the leptonic collider BEPCII, at the Institute of High Energy Physics, in Beijing since 2009. Its program covers charmonium(-like), charmed and light hadrons spectroscopy, new physics and QCD studies.
Its physics program has been recently extended up to 2030. In 2024, both the accelerator and the spectrometer are undergoing an upgrade program. The inner drift chamber, which was showing aging effects, has been replaced with a new inner tracker based on the cylindrical GEM technology.
The CGEM-IT will deploy three coaxial layers of cylindrical triple-GEM detectors. A dedicated electronic readout chain, based on the TIGER ASIC, and the FPGA-based GEMROC readout cards, has been thoroughly developed and tested with the final detectors.
Studies with cosmic ray data taken during a standalone commissioning show a spatial resolution better than 200 um with orthogonal tracks and tracking efficiency of 95% in each layer. The system was installed starting from October 2024.
This presentation will show the project details, the results from the standalone commissioning with cosmic rays, and the most interesting parts of the installation.

Secondary track

Author: GRECO, Michela (INFN and University of Torino)

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