

The Cylindrical-GEM Inner Tracker Detector of the KLOE-2 Experiment

Thursday 21 February 2019 09:00 (20 minutes)

The KLOE-2 experiment represents the continuation of KLOE and acquired 5.5 fb^{-1} data from November 2014 to March 2018 with the aim of collecting the largest sample of ϕ mesons at the DAΦNE e^+e^- collider at the Frascati National Laboratory of INFN.

A new tracking device, the Inner Tracker, was installed at the interaction region of KLOE-2 and it was operated together with the Drift Chamber to improve track and vertex reconstruction capabilities of the new experimental apparatus.

The Inner Tracker is a four-layer cylindrical triple-GEM detector with each layer equipped with an X-V strips-pads stereo readout.

Although GEM detectors have been extensively used in high energy physics experiments, the IT, with its fully-cylindrical geometry, is a frontier detector and KLOE-2 is the first experiment which benefited of this novel detector technology operated at a collider.

The operation of the Inner Tracker will be presented, together with the results of the alignment and calibration and tracking-verexing performance of such a unique detector.

Authors: DI CICCIO, Alessandro (Dipartimento di Matematica e Fisica, Università Roma Tre, Via della Vasca Navale 84, Rome, Italy and INFN Sezione di Roma Tre, Via della Vasca Navale 84, Rome, Italy); Dr DOMENICI, Danilo (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Dr DE LUCIA, Erika (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Dr CZERWINSKI, Eryk (Department of Nuclear Physics, Jagiellonian University, Street 11, 30-348 Cracow, Poland); Dr MORELLO, Gianfranco (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Dr BENCIVENNI, Giovanni (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Prof. FELICI, Giulietto (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Dr BRANCHINI, Paolo (INFN Sezione di Roma Tre, Via della Vasca Navale 84, Rome, Italy); Mr CIAMBRONE, Paolo (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy); Dr KANG, Xiaolin (Laboratori Nazionali di Frascati dell'INFN, Via Enrico Fermi 40, Frascati, Rome, Italy)

Presenter: DI CICCIO, Alessandro (Dipartimento di Matematica e Fisica, Università Roma Tre, Via della Vasca Navale 84, Rome, Italy and INFN Sezione di Roma Tre, Via della Vasca Navale 84, Rome, Italy)

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