A Universal Detector Toy Program (A fast simulation and track fit program tool for flexible and fast optimization of storage ring detectors)

Detector concepts are in general optimized by Monte Carlo simulation. However, programs for simulation and reconstruction of detector related data from track measurements are nowadays of great complexity. The detector toy program is a simple MATLAB tool which allows the fast optimization of the position and precision of track sensitive detector modules and their material budget. It can be installed on a mobile PC and is able to give very quick response, e.g. during a discussion meeting. It can be used by everybody without any software experience, but can also easily be adapted to meet individual needs. The basic version allows to generate strip detectors with arbitrary stereo angles, either with digitized or Gaussian errors, pixel detectors, and TPC results, including inefficiencies. Standard tests like chi-square distributions and pull quantities are included. A graphical user interface is planned for the conference release.

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