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Backtracking algorithm for lepton reconstruction with HADES

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The HADES (High Acceptance Di-Electron Spectrometer) at the GSI Helmholtzzentrum für Schwerionenforschung investigates dilepton and strangeness production in elementary and heavy-ion collisions. In April - May 2012 HADES recorded 7 billion Au+Au events at a beam energy of 1.23 GeV/u with the highest multiplicities measured so far. The track reconstruction and particle identification in the high track density environment are challenging. Most important detector component for lepton identification is a Ring Imaging Cherenkov detector. Its main purpose is the separation of electrons and positrons from large background of charged pions produced in heavy-ion collisions. In order to improve lepton identification a new backtracking algorithm was developed. In this contribution we will show the results of a new backtracking algorithm compared to the currently applied method for $\pi^-/+$ identification. Efficiency and purity of a reconstructed $\pi^-/+$ sample will be discussed as well.

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