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Verification of charge sign for high-energy particles measured by magnetic tracking system of PAMELA spectrometer

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Analysis of experimental data of primary positrones and antiprotons fluxes obtained by PAMELA spectrometer, recently confirmed by AMS-02 spectrometer, for some reasons shows big interest to the high energies, which are more than 100 GeV. In this work we present a method for identification of high-energy antiprotons on a background of imitating them protons due to finite instumental resolution for high energies (so-called spillover). We base our approach on computing a set of distinctive features represented by differently computed rigidities and training AdaBoost classifier, which shows good classification accuracy of 89% for rigidity up to 1000 GeV.

Primary author(s) :   LUKYANOV, Anton (PhD student)

Co-author(s) :   MAYOROV, Andrey (National Research Nuclear University MEPhI)

Presenter(s) :   MAYOROV, Andrey (National Research Nuclear University MEPhI)

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