π^+ - π^- asymmetry and the neutron skin in heavy nuclei

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The theoretical nuclear physics predictions and experimental results on antiprotonic atoms lead to different proton and neutron spatial distributions. At CERN SPS energies production of positive and negative pions differs for pp, pn, np and nn scattering. These two facts lead to an impact parameter dependence of the π^+ to π^- ratio in $^{208}Pb +^{208} Pb$ collisions. A recent experiment at CERN seems to confirm qualitatively these predictions. The results for two models considered are almost identical. It may open a new possibility for determination of neutron density distribution in nuclei.

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