
Subject: Efficiency reduction of antiprotons above 20 degrees
Posted by [Karin Schönning](#) on Tue, 25 Nov 2014 15:35:06 GMT
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Dear Pandaroot experts,

there is an efficiency loss of antiprotons above a lab polar angle of 20 degrees in all hyperon channels I had a look at so far. To avoid any other kind of systematics I (after advice from Stefano) generated a sample of $\bar{p} p \rightarrow \bar{\Lambda} \Lambda$ at 1.64 GeV/c with an isotropic angular distribution of the $\Lambda/\bar{\Lambda}$. The problem remains, as you can see in the attached figures.

th_p_pbar.pdf shows theta (lab polar angle) vs the lab momentum of the antiproton, whereas th_p_proton.pdf is the same but for the proton.

Furthermore, there is a non-negligible difference in the π^- and π^+ yields: 74% for π^- while 65% for π^+ .

What could be the reason for this? Interaction of the antiproton with the detector material or some artifact of the tracking?

Kindest regards,
/Karin

File Attachments

- 1) [th_p_pbar.pdf](#), downloaded 561 times
 - 2) [th_p_proton.pdf](#), downloaded 489 times
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