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 pbar p -> Lambdabar Lambda at 1.64 GeV/c with an isotropic angular distribution of the Lambda/Lambdabar. 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 an non-negligible difference in the pi- and pi- yields: 74% for pi- while 65% for pi+.

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 753 times
2) th_p_proton.pdf, downloaded 680 times