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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  $\pi^-$  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

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- 1) [th\\_p\\_pbar.pdf](#), downloaded 432 times
  - 2) [th\\_p\\_proton.pdf](#), downloaded 384 times
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