
Subject: question concerning pbar p->pi0 pi0

Posted by [Johan Messchendorp](#) on Mon, 03 Dec 2007 20:06:35 GMT

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Dear all,

Please find below an email from Michael Dueren who asks whether there exists a parameterization of the pbar p -> pi0 pi0 cross section. Can anyone help him out here?

Johan.

----- original email -----

Irina Brodski in our group is simulating the ppbar -> gamma gamma and to gamma pi-zero processes.

In addition she needs the background p pbar -> pizero pizero, but she does not know where to get the cross section for this reaction. Do you know if in the pandaroot there is already a generator for p pbar -> pizero pizero that has the right energy dependence of the cross section? If not: do you know if there is a parameterization of a database with this cross section somewhere accessible?

Best regards,
Michael.

Subject: Re: question concerning pbar p->pi0 pi0

Posted by [Jens Sören Lange](#) on Tue, 04 Dec 2007 06:02:21 GMT

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Dear all,

no parametrization, but at least a few cross section numbers
in the 2-4 GeV region: (but one can see an energy dependance)

<http://durpdg.dur.ac.uk/cgi-bin/hepdata/testreac/10738/FULL/q>

<http://durpdg.dur.ac.uk/cgi-bin/hepdata/testreac/7414/FULL/q>

<http://durpdg.dur.ac.uk/cgi-bin/hepdata/testreac/3008/FULL/q>

Please note that Irina is using EvtGen which fixes the initial state to J=1 (so the J=0,2,3,4,... are missing in her simulation, but are in the above cross section numbers). But currently there is no way to avoid this (and nobody knows the exact angular momentum mixture in the initial state anyway before Panda starts running).

Furthermore, her EvtGen does (right now) not take into account intermediate resonances, such as the f0(980)

(which we know must be there in $\pi^0 \pi^0$).

Soeren
