Subject: Re: Bear Smear and Cross Sections
Posted by Michael Kunkel on Sun, 02 Sep 2012 14:11:19 GMT
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I have tried to implement what you have written so far. I have run into some more questions. I use 64 models for the energy range 1.74 - 3.33 GeV in the c.m. frame. something I find strange is that in certain energy regions, PLUTO generates the cross section oddly. In the figure below, the PLUTO generated c.m. energy is depicted.

Notice the jump in "integrated cross section" between 1.89 and 1.91 GeV. This can be seen easier in the next figure below.

However, if I look at the differential cross sections for these energy ranges, I do not see a cause for this "jump", see figure below. (The shown plots are the interpolated plots from TGraphs)

Could you please clarify what is going on here?

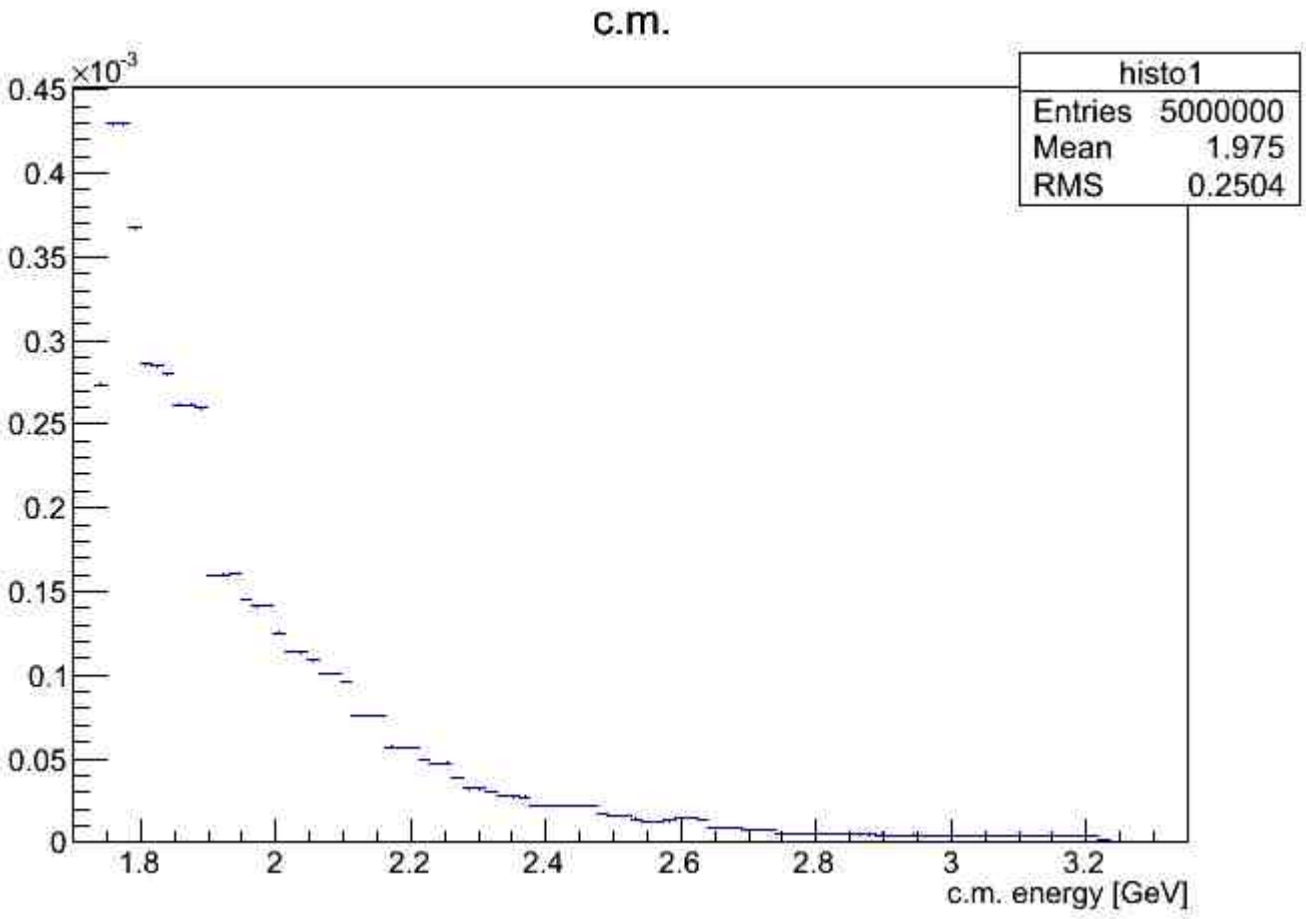
Also, I was hoping you would look over my macro and see if maybe there was a mistake in my syntax that might have caused this issue. I am uploading the code.

EDITED:
Furthermore, I have plotted the published lab energy vs. total cross section and compared it to what PLUTO generates. There is a scaling factor, however this is just a constant onto one of the spectrum.
As seen below, at small energies, there is a discrepancy as seen mentioned previously.

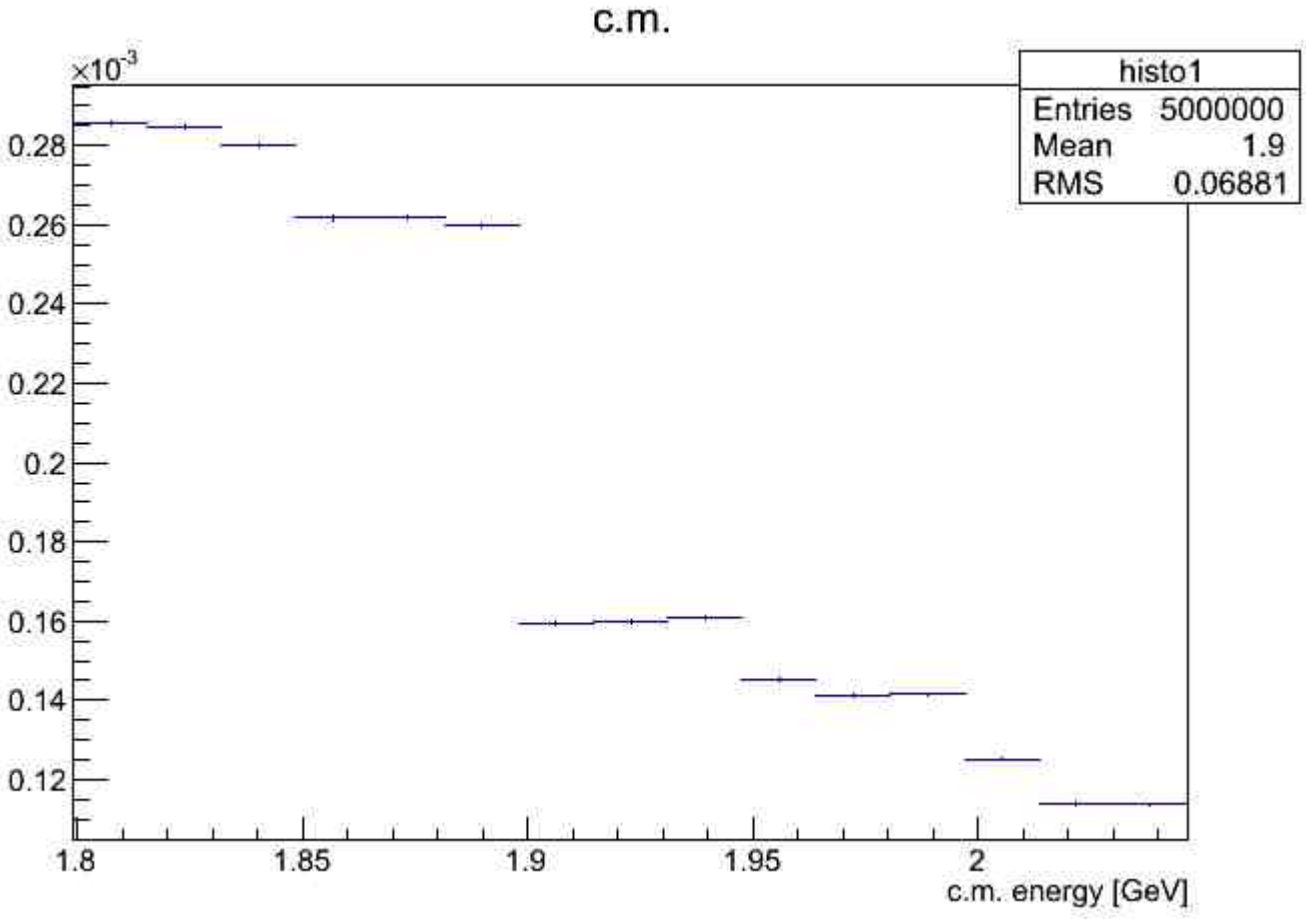
Thanks
Michael

File Attachments

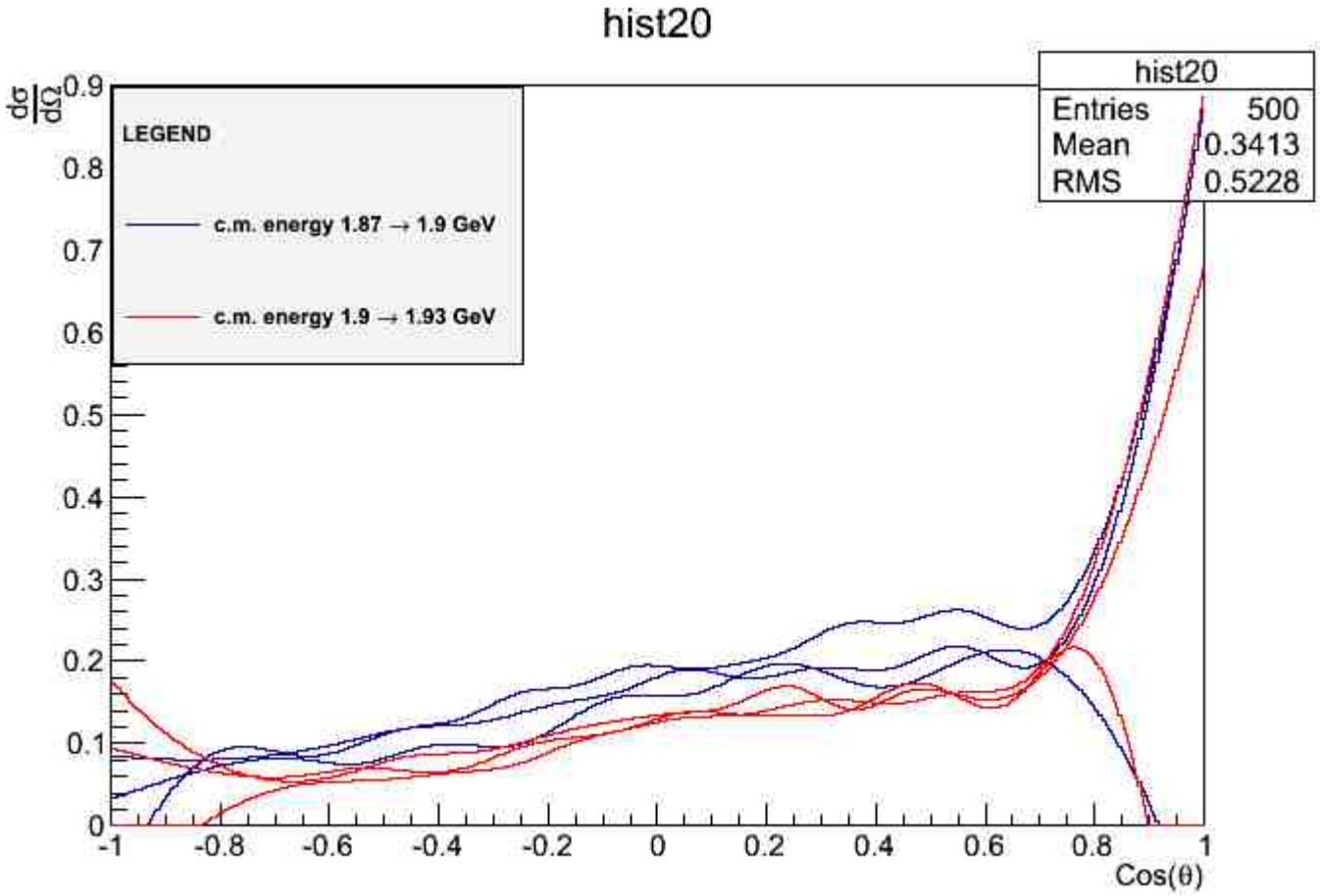
1) PLUTO_generated_cm_energy_smear.jpeg, downloaded 2222 times



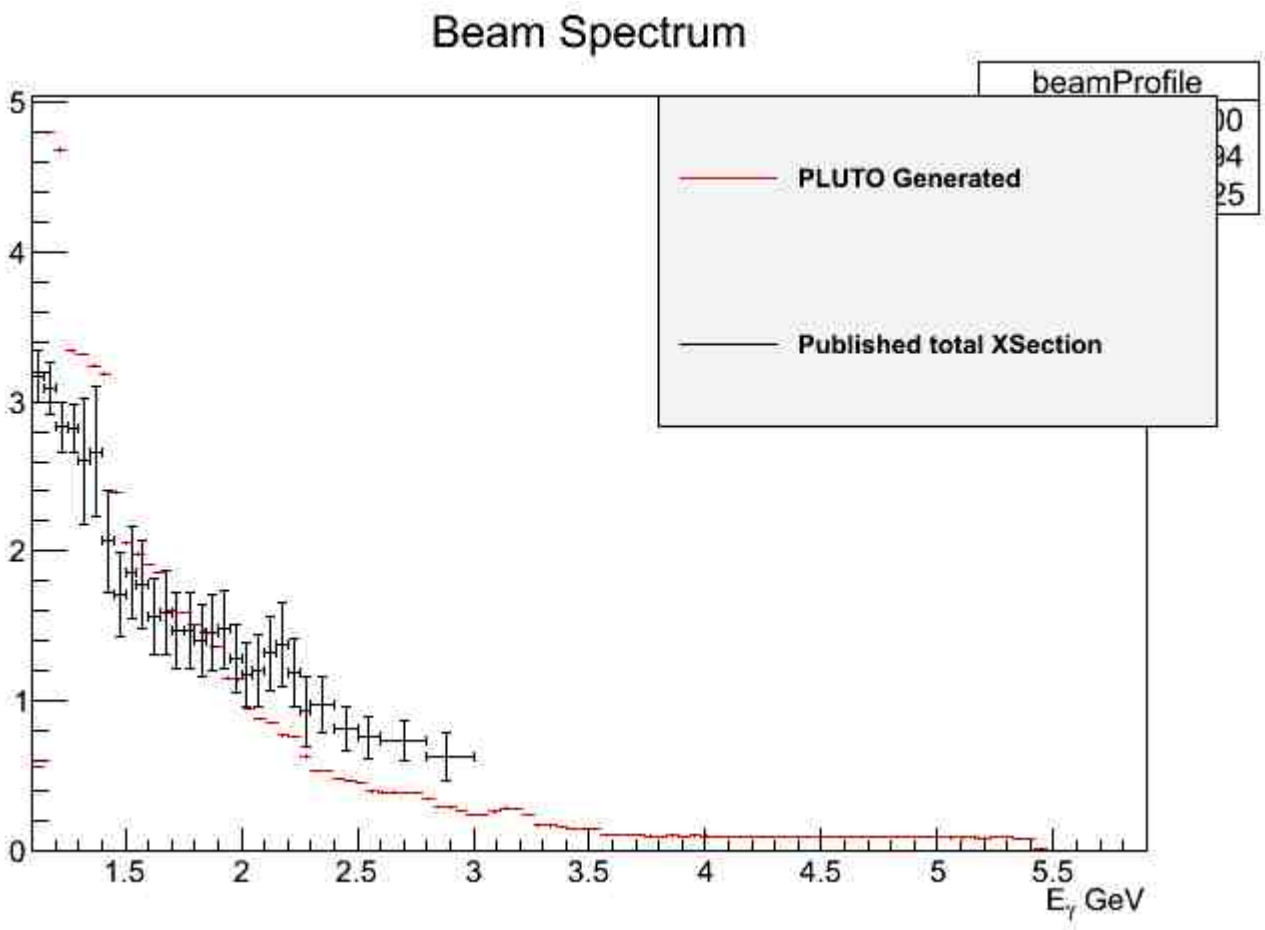
2) PLUTO_GEN_180_240.jpg, downloaded 2264 times



3) diff_Xsection_187_193.jpg, downloaded 2187 times



4) eta_XSection.C, downloaded 495 times
5) total_Xsection_compare.jpg, downloaded 2233 times


Beam Spectrum
beamProfile
PLUTO Generated
Published total XSection
0
1
2
3
4
5
1.5
2
2.5
3
3.5
4
4.5
5
5.5
E_γ GeV