Subject: Re: Bear Smear and Cross Sections
Posted by Michael Kunkel on Mon, 27 Aug 2012 23:32:53 GMT
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I do understand that my thoughts are hard to convey, I appreciate the time you are taking with this. I wanted to clarify a typo in my previous message.

Instead of
Michael Kunkel wrote on Mon, 27 August 2012 21:07Is _f the density function? If so, wouldn't using Input : _x s cos(theta), _y is differential cross section
Output : cross section suffice?

I wanted to say

Is _f the density function? If so, wouldn't using Input : _x s cos(theta), _y is differential cross section
Output : _f cross section suffice?

What I am finding hard to conceive here is how the distribution is generated.

Moreover, I want to clarify what I am trying to do, and hopefully I can understand my mistakes after this.

I have 64 models I will be using. I was assuming I could implement this as

```
  model1->SetRange(1.77,1.8);
...
...
...
  model64->SetRange(2.56,2.6);

  model1->AddHistogram(example1,"value = Eval(_x); _f =_y * value");
  makeDistributionManager()->Add(model1);
  ...
  ...
  ...
  model64->AddHistogram(example64,"value = Eval(_x); _f =_y * value");
  makeDistributionManager()->Add(model64);
```

In the above snipet I use 1 histogram for each model. Each histogram is derived from published data with

_x = Cos(theta)
_y = Differential Cross section
The histograms are extrapolated from TGraphs (see below);
c.m. 1.77 ->1.8 GeV

c.m. 2.56 ->2.6 GeV

As it can be seen from the plots above, the cross section depends on both the c.m. energy and Cos(theta);

I am trying to model this, however the example macro you provided states (lines 31 & 32):

```
    //Input:  _x is cos(theta), _y is the c.m. energy
    //Output: _f: cross section
model->AddHistogram(distribution,"value = Eval(_x); _f = _y * value");
```

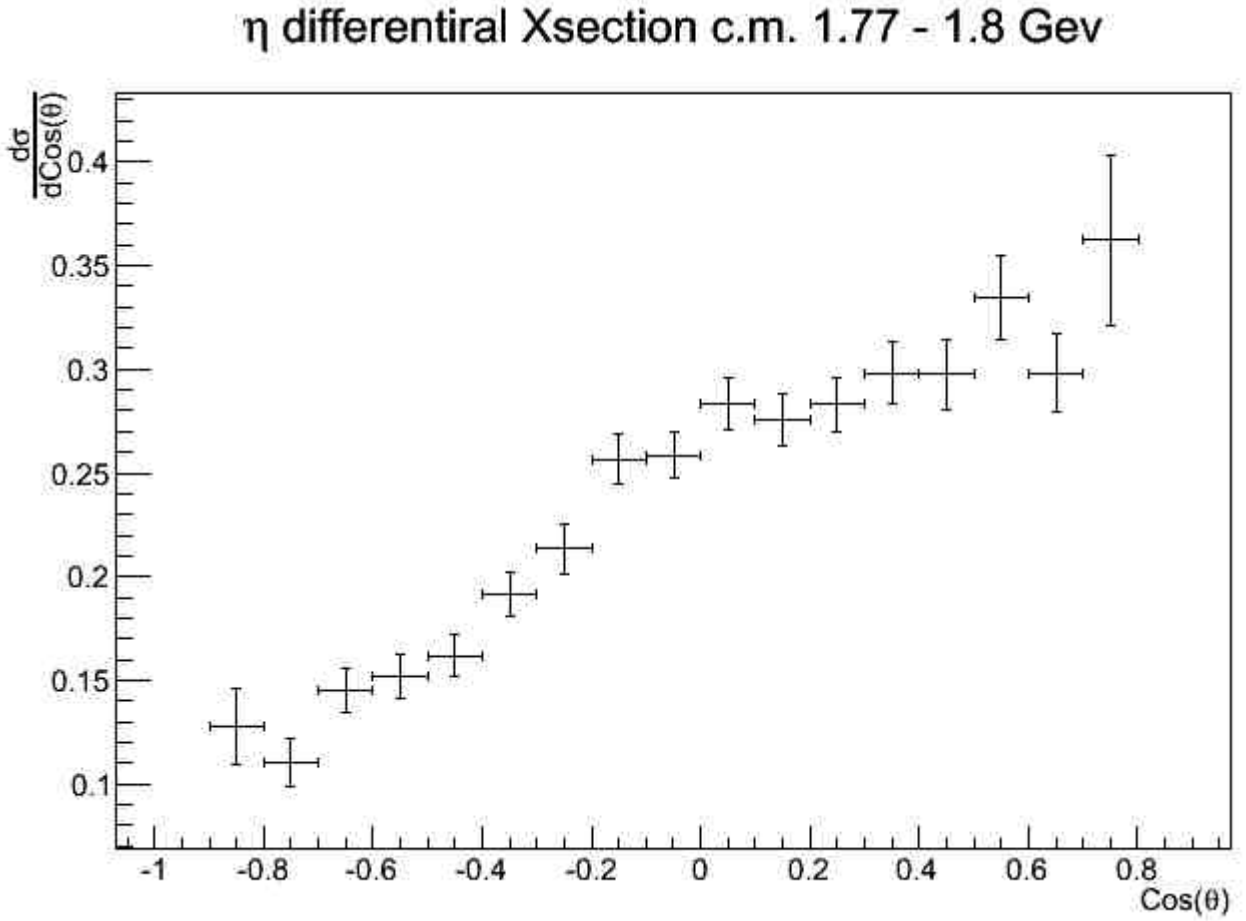
But cross section, from a physics stand point is proportional to Cos(theta) / s, where s is square of c.m. energy.

This is my a source of my confusion and also not understanding how to use what I already have, cos(theta) vs. diff XSection, is the other part of my confusion.

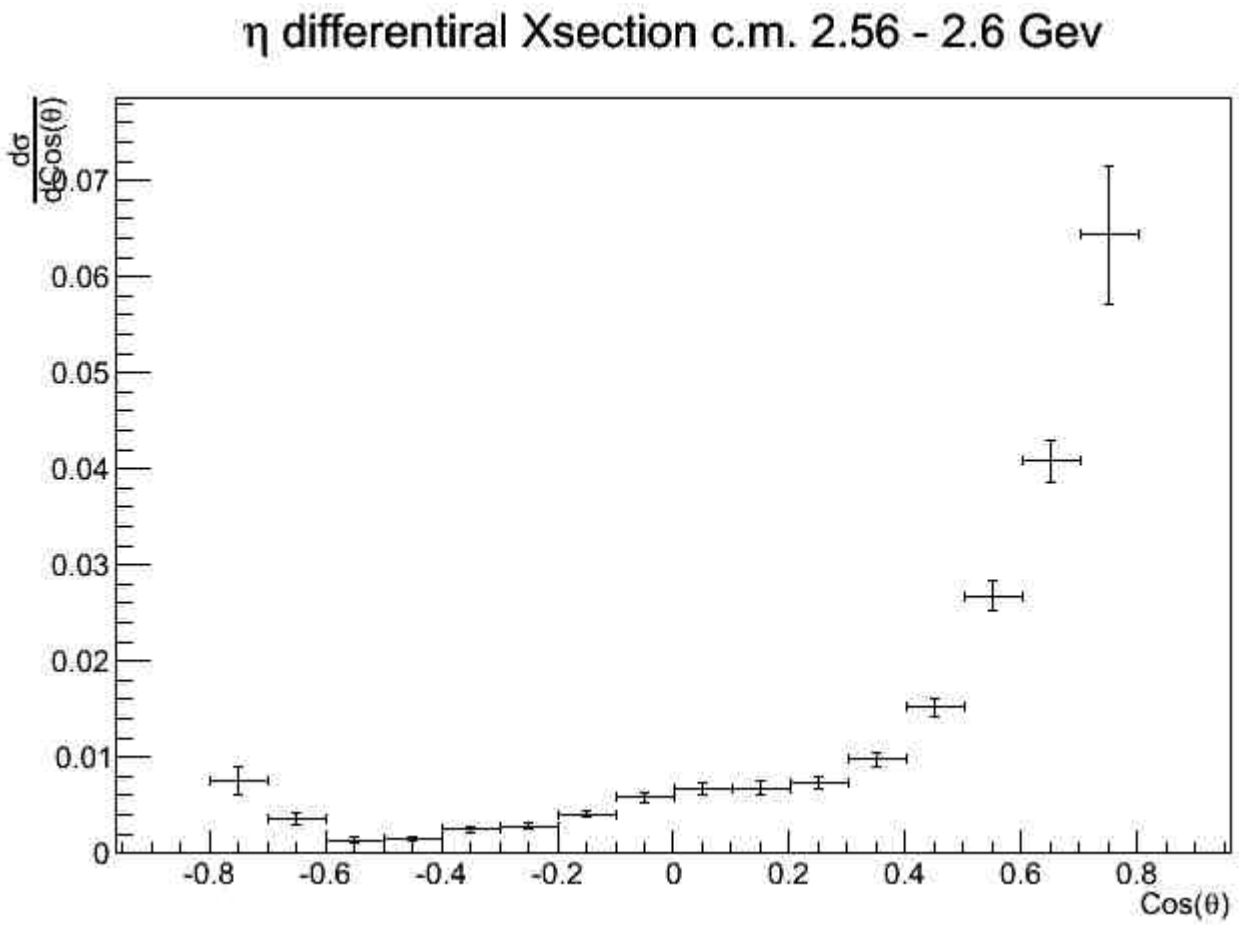
Thanks

File Attachments

1) Eta_1.77_1.8.jpeg, downloaded 1757 times



2) Eta_2.56_2.6.jpeg, downloaded 1730 times


η differentiral Xsection c.m. 2.56 - 2.6 Gev
dσ/dCos(θ)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
Cos(θ)