5 26 2011 t.s. 7 9 2011 t.s. 8 5 2011 t.s.

I. $Delta_A, \Delta_V$

Δ_V, Δ_A are defined in Eq. (52) of PRC72(2005)025204 as

$$A = -\frac{Q^2 G_F}{\sqrt{2} 4\pi\alpha}[2 - 4\sin^2\theta_W + \Delta_V + \Delta_A] \tag{1}$$

Q^2, W are calculated by using

$$Q^2 = 4\sin^2(\theta/2) k_i k_f \tag{2}$$

$$W = \sqrt{(P + k_i - k_f)^2} = \sqrt{m_N^2 + 2m_N(k_i - k_f) - Q^2} \tag{3}$$

with $k_i = 4.8GeV, k_f = 4GeV \times (1 \pm 0.045)$ and $\theta = 12.9^o \pm 0.003/\pi * 180$.

Table of Delta looks as follows:

```
#  theta(deg) k_iGeV)   k_f(GeV)  Wcm(GeV)  Q2(GeV^2)  delta_V       delta_A
   12.72811   4.80000   3.82000   1.34873   0.90116 -0.158079E+00  0.223220E-01
 .....
```

II. k_i, k_f, θ

For given scattering angle θ, we vary $0 < k_f < k_f(max)$. k_i is given by θ, k_f, W as

$$k_i(W) = \frac{W^2 - m_N^2 + 2m_N k_f}{2m_N - 4\sin^2(\theta/2) k_f} \tag{4}$$

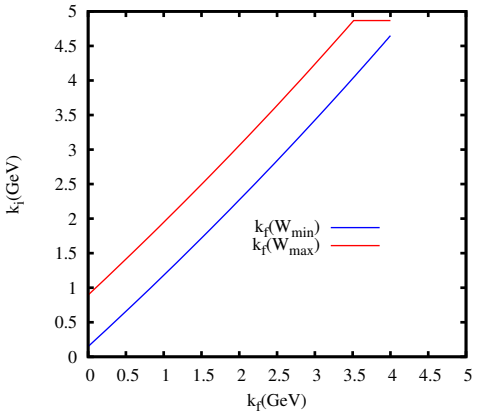
We vary k_i, which satisfies the following conditions

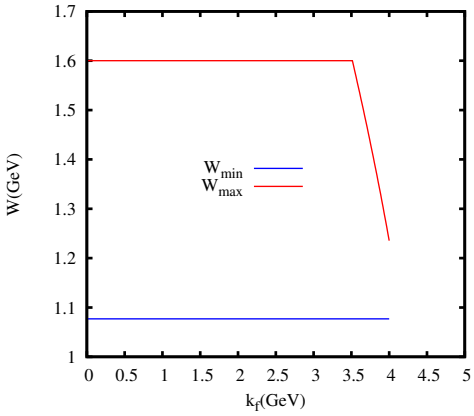
$$k_i(W_{min}) < k_i < k_i(W_{max}) \tag{5}$$

$$k_i < k_i^{max} \tag{6}$$

where $W_{min} = m_N + m_\pi$

With $m_N = 0.938d$GeV,$m_\pi = 0.1385$GeV and $\theta = 12.9^o$, $0 < k_f < 4.5GeV$, W_{max}=1.6GeV, $k_i^{max} = 4.8674$GeV, table of the asymmetry can be calculated within (k_f, k_i) or (k_f, W) domains shown in the following figures and table.





k_f	$k_i(min)$	W(min)	Q2	$k_i(max)$	W(max)	Q2
0.000000	0.148720	1.077000	0.000000	0.894629	1.600000	0.000000
1.053881	1.237679	1.077000	0.065841	2.005344	1.600000	0.106679
2.107762	2.392072	1.077000	0.254504	3.182803	1.600000	0.338634
3.161643	3.617982	1.077000	0.577402	4.433205	1.600000	0.707505
3.512937	4.043672	1.077000	0.717043	4.867400	1.600000	0.863110
4.000000	4.648794	1.077000	0.938640	4.867400	1.235360	0.982779

DIS1($\theta = 12.9$)

k_f	$k_i(min)$	W(min)	Q2	$k_i(max)$	W(max)	Q2
0.000000	0.148720	1.077000	0.000000	0.894629	1.600000	0.000000
1.098000	1.284653	1.077000	0.071201	2.053258	1.600000	0.113801
2.074000	2.354016	1.077000	0.246443	3.143986	1.600000	0.329146
3.050000	3.484530	1.077000	0.536467	4.297087	1.600000	0.661565
3.660000	4.224529	1.077000	0.780473	5.051871	1.600000	0.933323

DIS2($\theta = 20$)

k_f	$k_i(min)$	W(min)	Q2	$k_i(max)$	W(max)	Q2
0.000000	0.148720	1.077000	0.000000	0.894629	1.600000	0.000000
1.052000	1.287774	1.077000	0.163401	2.087763	1.600000	0.264909
2.016333	2.487332	1.077000	0.604918	3.344273	1.600000	0.813326
2.630000	3.343834	1.077000	1.060721	4.241441	1.600000	1.345456

III. DEUTERON

$\Delta_V(d), \Delta_A(d)$ for deuteron is defined as

$$A_d = -\frac{Q^2 G_F}{\sqrt{2} 4\pi\alpha}[2 - 4\sin^2\theta_W + \Delta_V(d) + \Delta_A(d)] \tag{7}$$

where A is

$$A_d = \frac{d\sigma_d(1) - d\sigma_d(-1)}{d\sigma_d(1) + d\sigma_d(-1)} \tag{8}$$

Simple calculation:cross section with helicity ± 1 for deuteron $d\sigma_d(h)$ is calculated simply sum of the cross section of proton and neutron

$$d\sigma_d(h) = d\sigma_{proton}(h) + d\sigma_{neutron}(h) \tag{9}$$

data files are $\theta, E_e, E'_e, W, Q^2, \Delta_V(p), \Delta_A(p), \Delta_V(n), \Delta_A(n), \Delta_V(d), \Delta_A(d)$. Last two numbers are for deuteron.