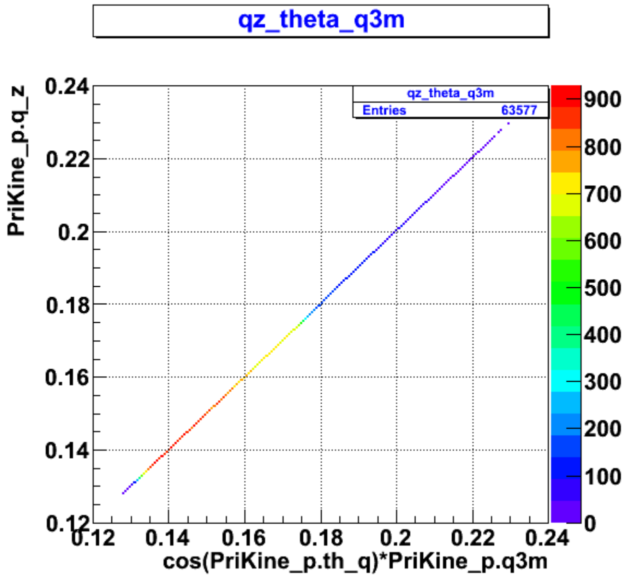


Figure 1.1
q_z = |q|*cos(theta_q)

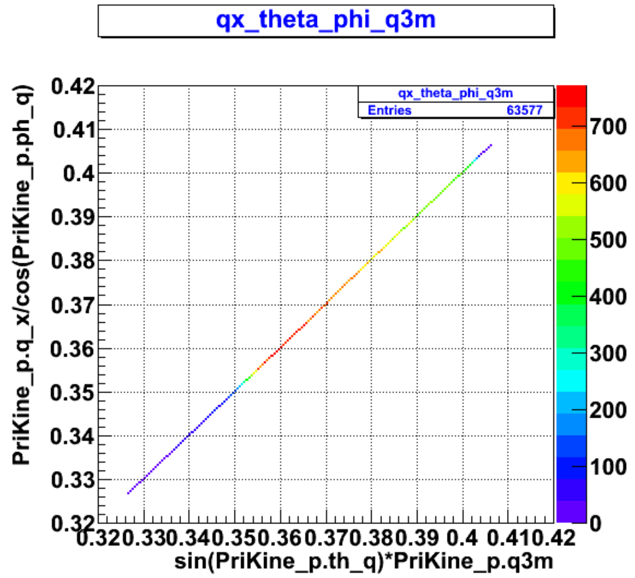


Figure 1.2
q_x/cos(phi_q) = |q|*sin(theta_q)
q_x = |q|*sin(theta_q)*cos(phi_q)

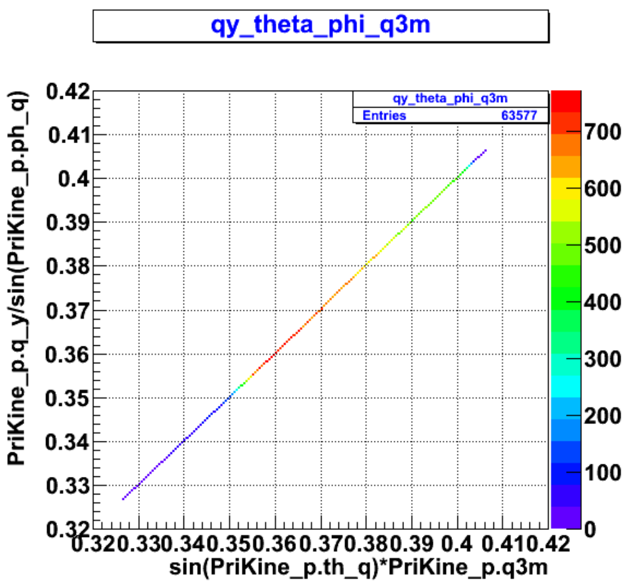


Figure 1.3
q_y/sin(phi_q) = |q|*sin(theta_q)
q_y = |q|*sin(theta_q)*sin(phi_q)

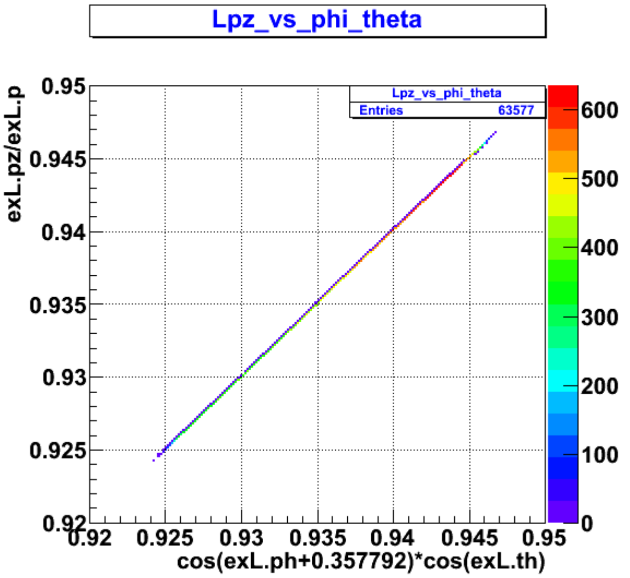


Figure 2.1
Lp_z = |Lp|*cos(theta_L)*cos(phi_L+scatt_0)
with for this run (2033) scatt_0 = 20.5 deg = 0.3578 rad.

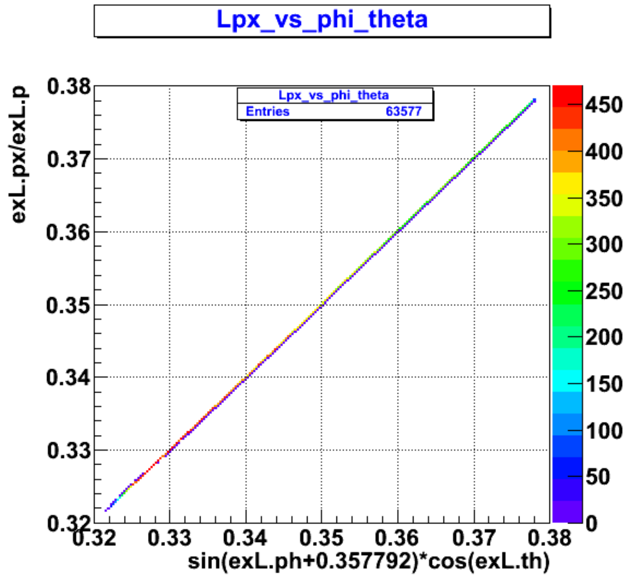


Figure 2.2
Lp_x = |Lp|*cos(theta_L)*sin(phi_L+scatt_0)

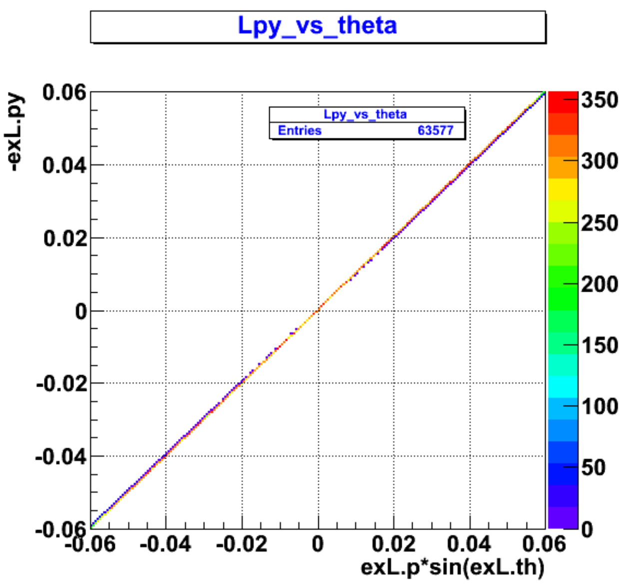


Figure 2.3
Lp_y = |Lp|*sin(theta_L)

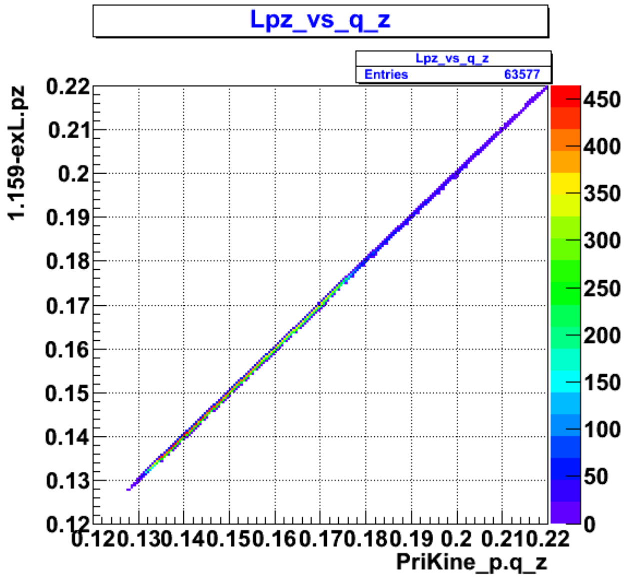


Figure 3.1
q_z = E_beam-Lp_z

|q|*cos(theta_q)
=
E_beam-|Lp|*cos(theta_L)*cos(phi_L+scatt_0)

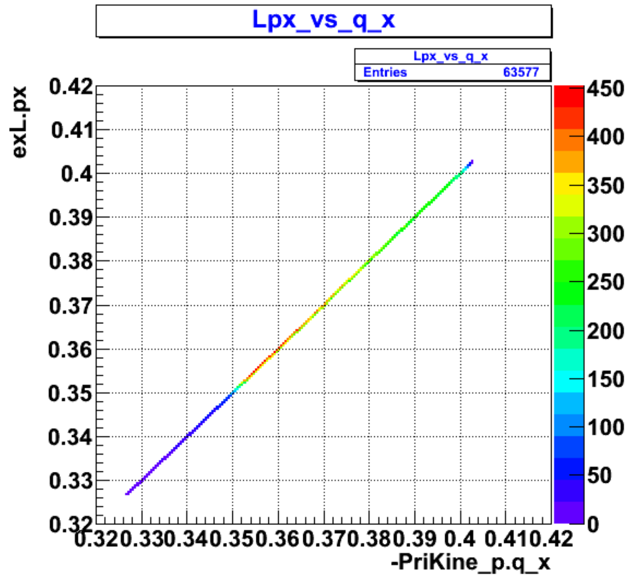


Figure 3.2
q_x = -Lp_x

|q|*sin(theta_q)*cos(phi_q)
=
-|Lp|*cos(theta_L)*sin(phi_L+scatt_0)

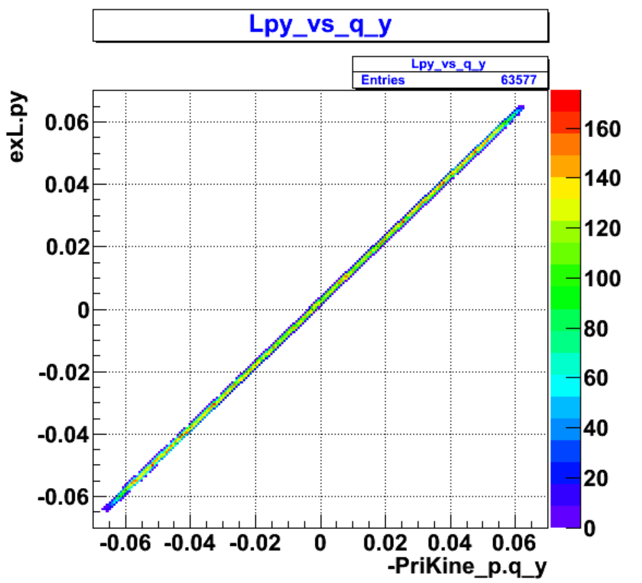


Figure 3.3
Lp_y = - q_y

|Lp|*sin(theta_L)
=
- |q|*sin(theta_q)*sin(phi_q)

1. |q|*cos(theta_q) = E-|Lp|cos(theta_L)*cos(phi_L+scatt_0)
2. tan(phi_q) = -tan(theta_L)/sin(phi_L+scatt_0)
3. |q|^2 = E^2+|Lp|^2-2*E*|Lp|*cos(theta_L)*cos(phi_L+scatt_0)
4. E' = |Lp| = E/{1+ E/M*(1-cos(theta_L)*cos(phi_L+scatt_0)}

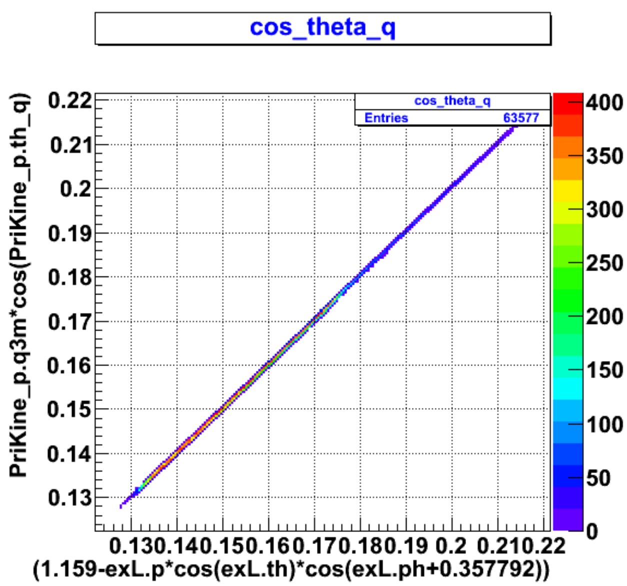


Figure 4.1
equation (1)

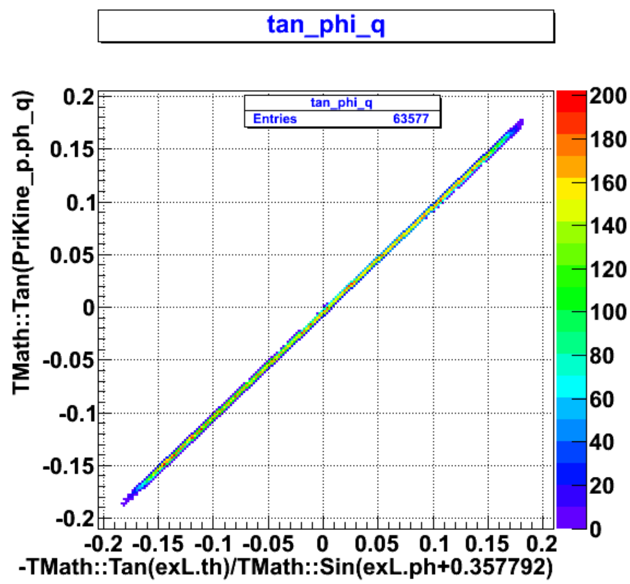


Figure 4.2
equation (2)

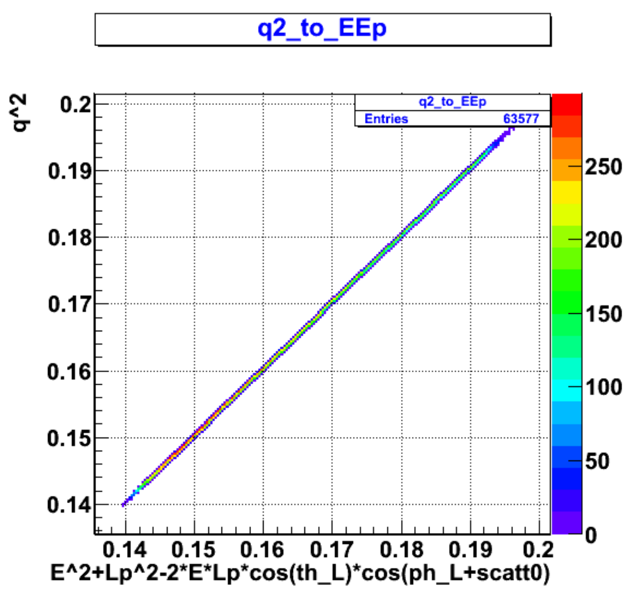


Figure 4.3
equation (3)

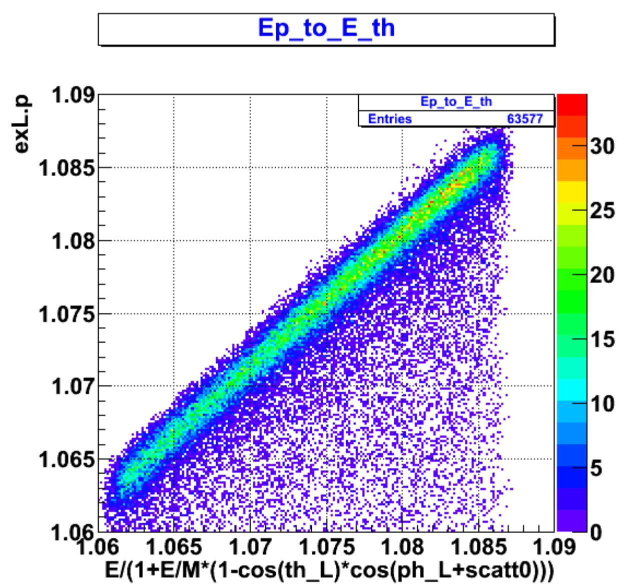


Figure 4.4
equation (4)

5. Omega_e = cos(phi_L+scatt_0)*theta_L
6. Omega_q = cos(theta_q)*phi_q
7. d(Omega_e)/d(Omega_q) = (Omega_e1-Omega_e2)/(Omega_q1-Omega_q2)
   = slope of Omega_e vs Omega_q
8. d(\sigma)/d(Omega_q) = d(\sigma)/d(Omega_e) * d(Omega_e)/d(Omega_q)
   = (0.87474) * d(\sigma)/d(Omega_e)

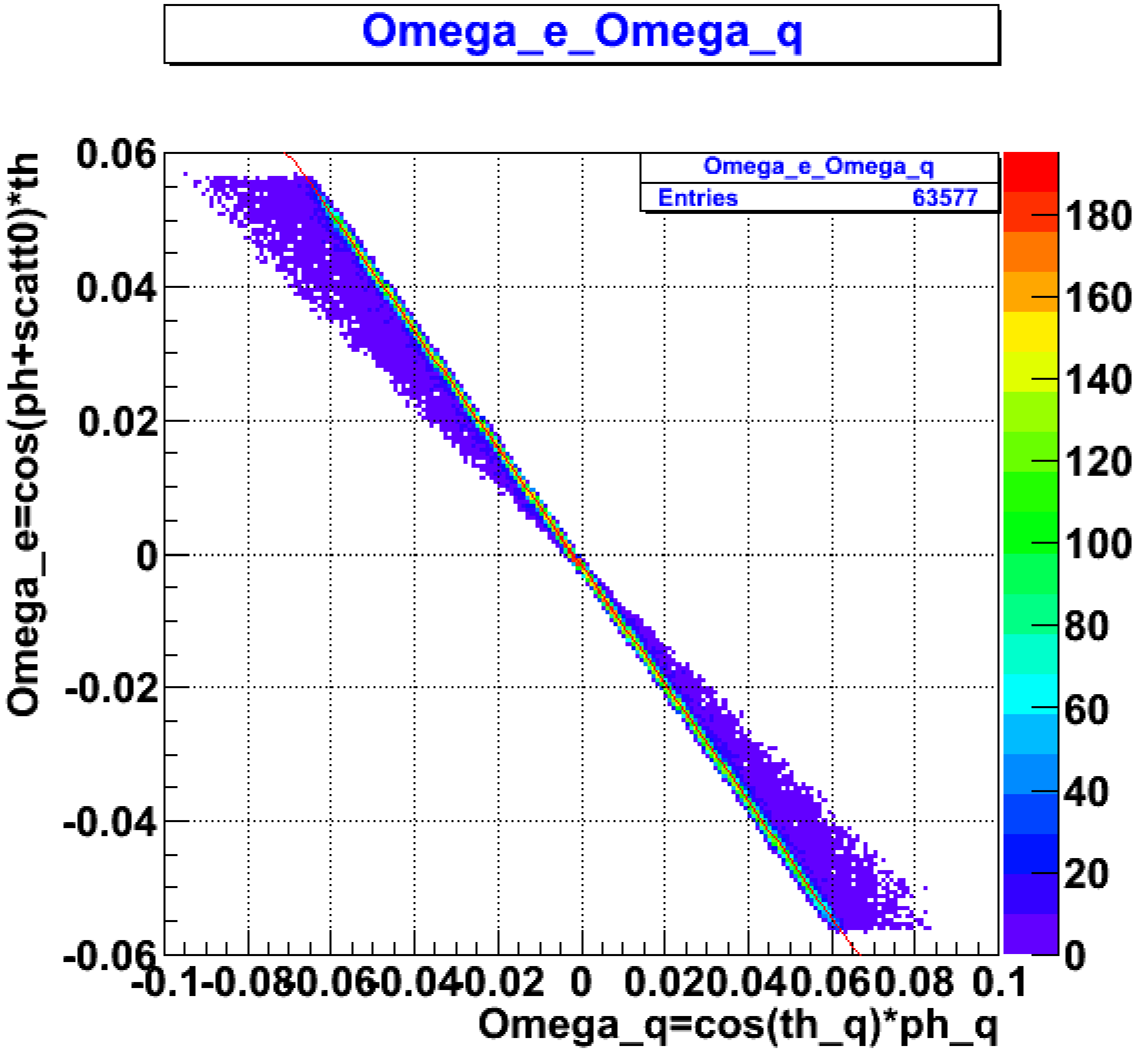


Figure 5.
Y = Omega_e (equation (5)),
X = Omega_q (equation(6)),
|slope| = d(Omega_e)/d(Omega_q) = 0.874743 (equation(7)). The fitting value is from figure 5.2 when the W2 max is imposed to remove the blur area.

By making Cut on W2 max =0.888 GeV2, Figure 5 translated to:

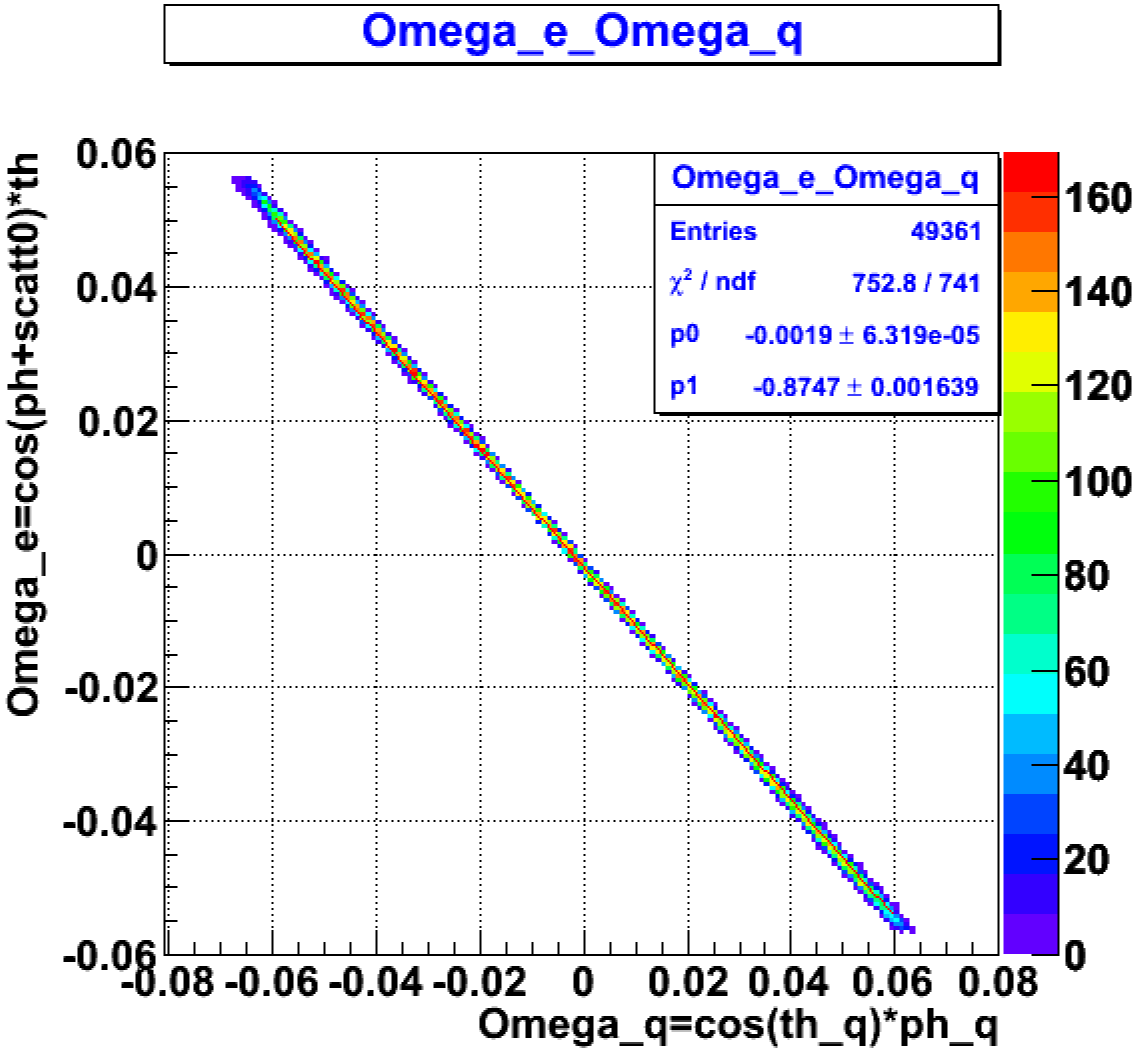


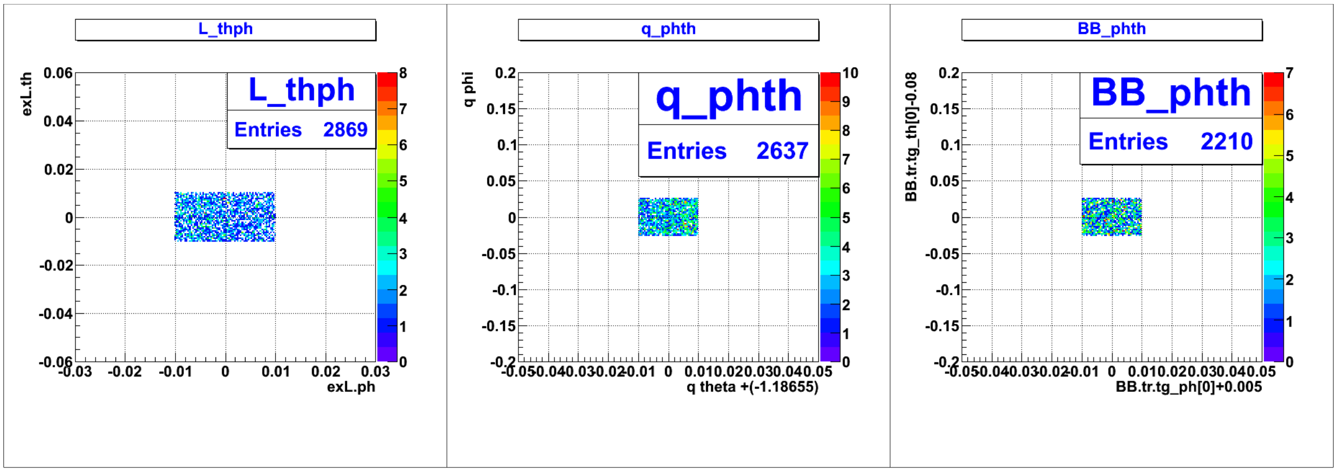
Figure 5.2: With W2 max cut at 0.888 GeV2 the radiative tail is eliminated from the blur area. This yeild d(Omega_e)/d(Omega_q) = 0.8747.

We can also derive the d(Omega_e)/d(Omega_q) from they definitions and other equations.

$$\frac{d(\text{Omega\_e})}{d(\text{Omega\_q})} = \frac{\cos(\text{phi\_e+scatted\_0})*d(\text{theta\_e}) - \sin(\text{phi\_e+scattered\_0})*\text{theta\_e}*d(\text{phi\_e})}{\cos(\text{theta\_q})*d(\text{phi\_q}) - \sin(\text{theta\_q})*\text{phi\_q}*d(\text{theta\_q})}$$

$$\frac{d(\text{Omega\_e})}{d(\text{Omega\_q})} = \frac{[d(\text{theta\_e})/d(\text{phi\_e})] - \tan(\text{phi\_e+scattered\_0})*\text{theta\_e}}{[d(\text{phi\_q})/d(\text{theta\_q})] - \tan(\text{theta\_q})*\text{phi\_q}}$$

where I need to calculated [d(theta_e)/d(phi_e)] and [d(phi_q)/d(theta_q)].



from	N_scattered	dOmega	N_scattered/dOmega	Exp CrossSection	
LHRS	2869	1.40E-004	2.05E+007	1.543	ubarn/strad
q_vector	2637	9.27E-004	2.84E+006	0.214	ubarn/strad
BB	2210	9.29E-004	2.38E+006	0.179	ubarn/strad
ratio					
LHRS/q_vector	1.088	0.151	7.200	7.200	
q_vector/BB	1.19	1	1.2	1.2	