

## Energy Correction

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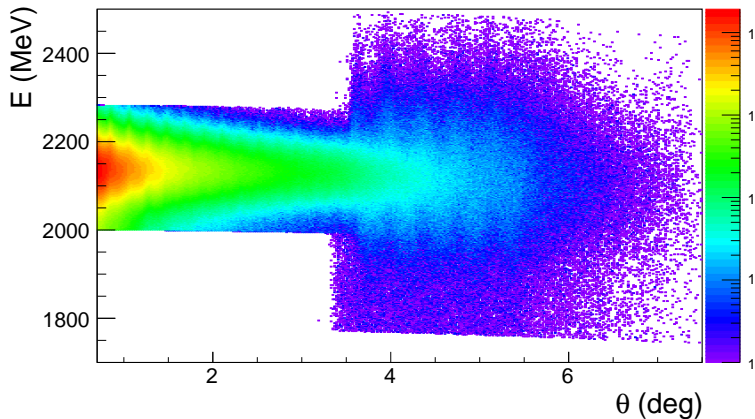


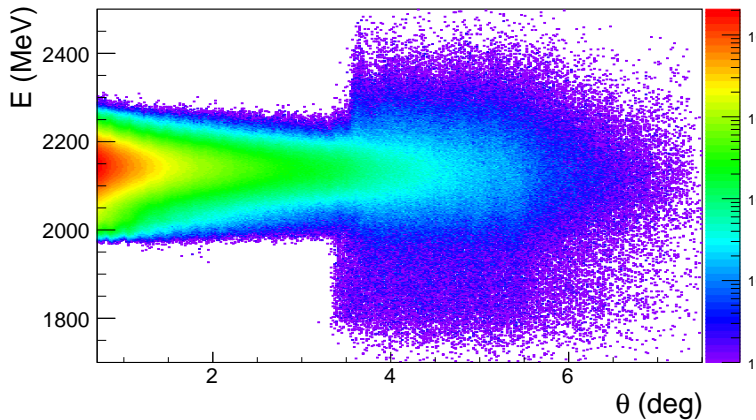
$$t_x = (x_{rec} - x_{center}) / (\text{cell size})$$

$$t_y = (y_{rec} - y_{center}) / (\text{cell size})$$

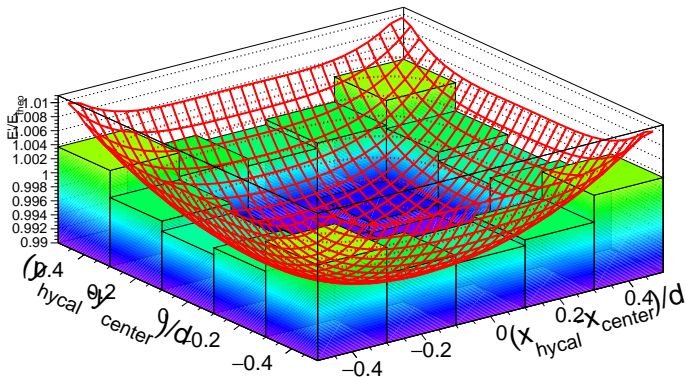
$$E_{corr} = \frac{E_0}{p_0 \cdot (1 + p_1 \cdot t_x^2 + p_2 \cdot t_y^2 + p_3 \cdot t_x^2 \cdot t_y^2 + p_4 \cdot t_x^4 + p_5 \cdot t_y^4)}$$

- ▶ Fit 2D to improve offset value
- ▶ Decorrelation of x and y axis with  $p_3$
- ▶ Using grouping of Weizhi for better statistics/region separation

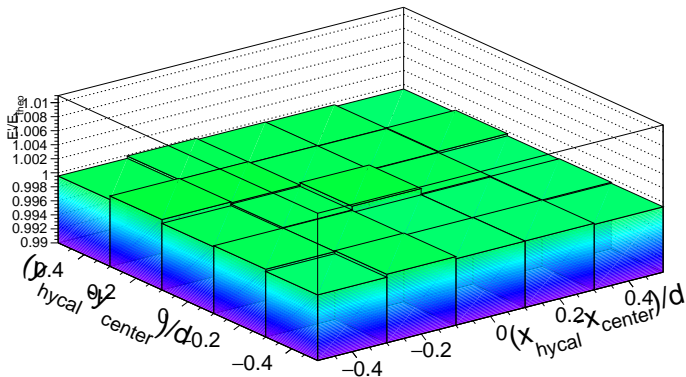




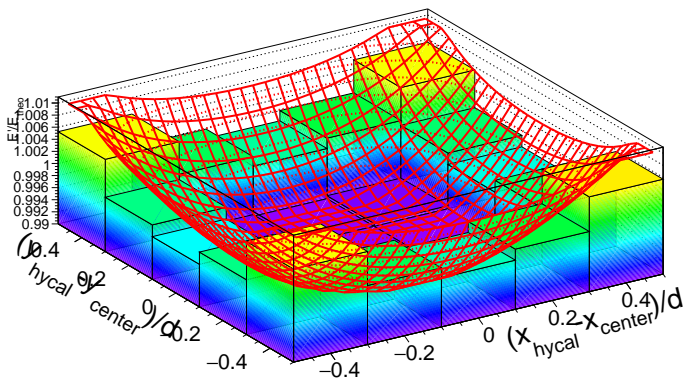
PWO ep



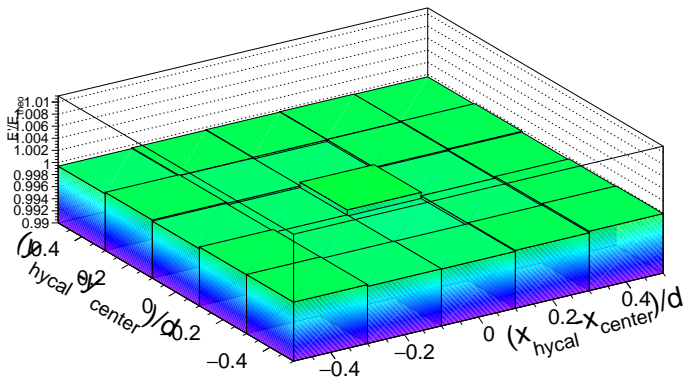
corrected PWO ep



PWO ee

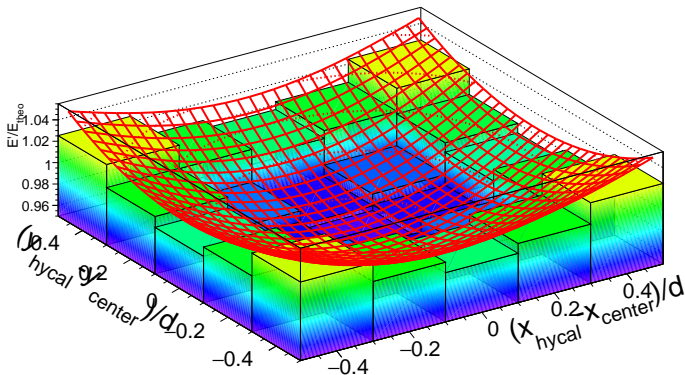


corrected PWO ee

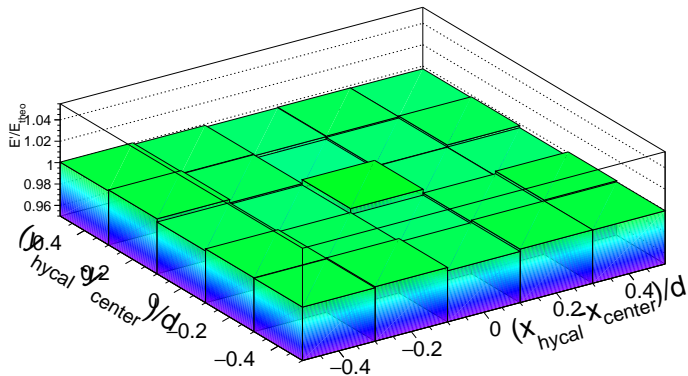




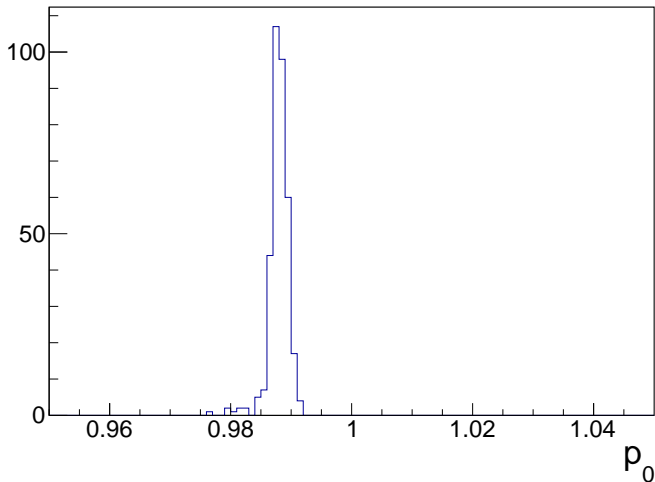
LG ep



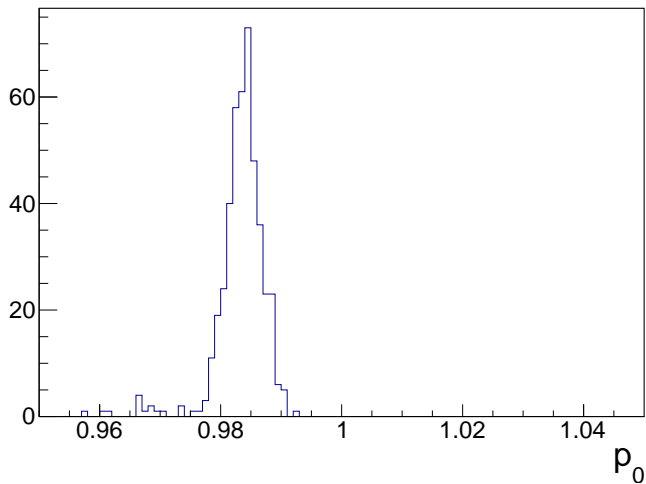
corrected LG ep



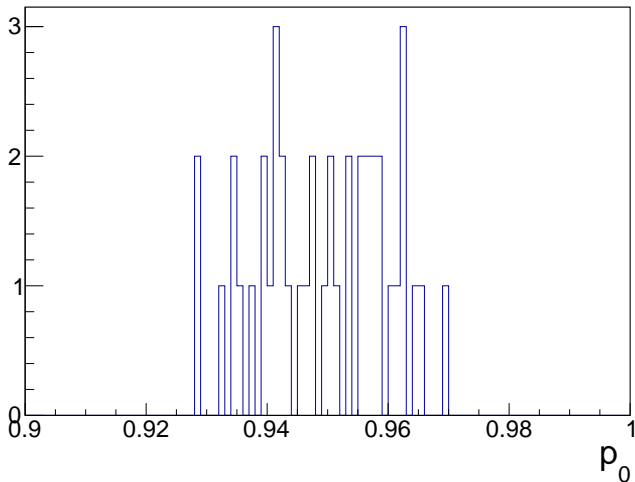
PWO ep



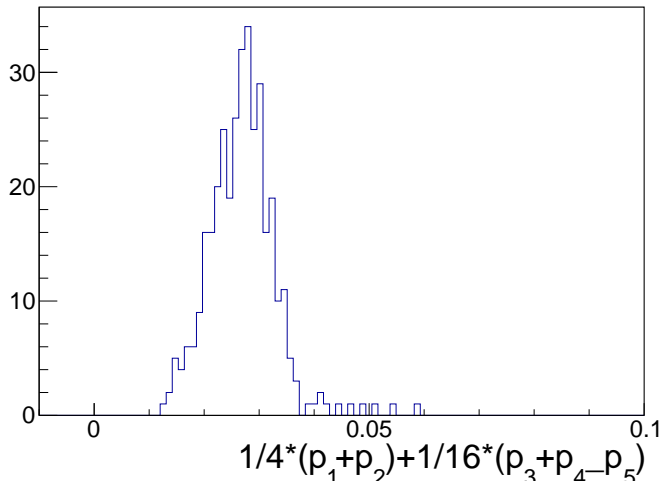
PWO ee



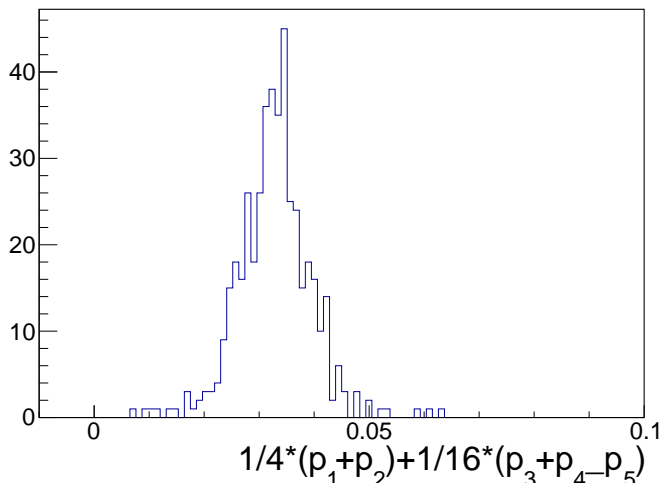
LG ep



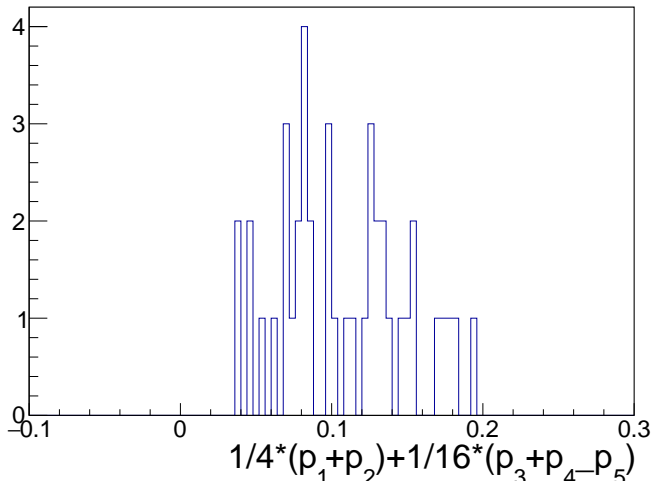
PWO ep



PWO ee



LG ep

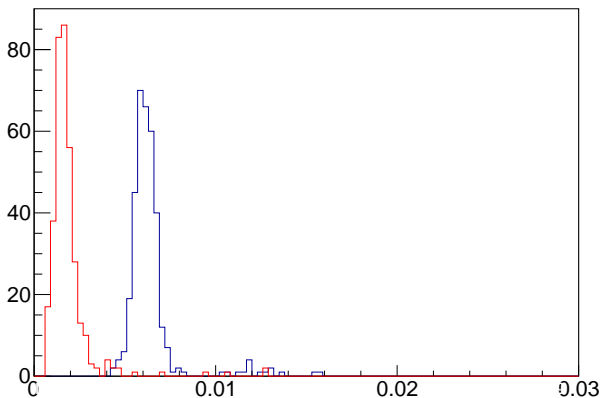




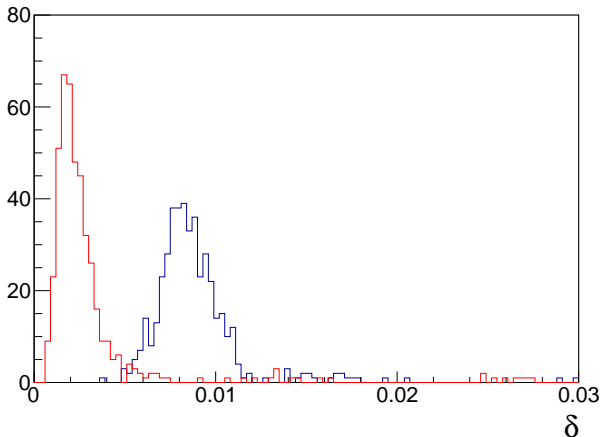
$$\delta = \sqrt{\sum_{i_x, i_y} (\text{data}(i_x, i_y) - 1)^2 / n_{bin}}$$

PWO ep: original  $\rightarrow$  corrected

$\langle \delta \rangle = 0.0056 \rightarrow 0.0045$



PWO ee  $\langle \delta \rangle = 0.0073 \rightarrow 0.00051$



LG ep  $\langle \delta \rangle = 0.024 \rightarrow 0.0023$

