

Energy Correction

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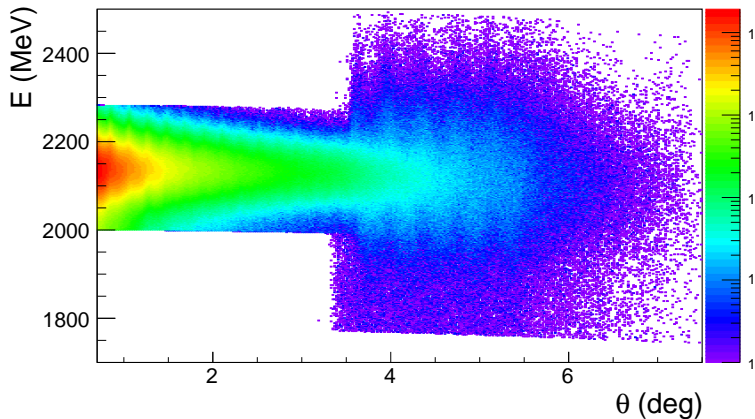


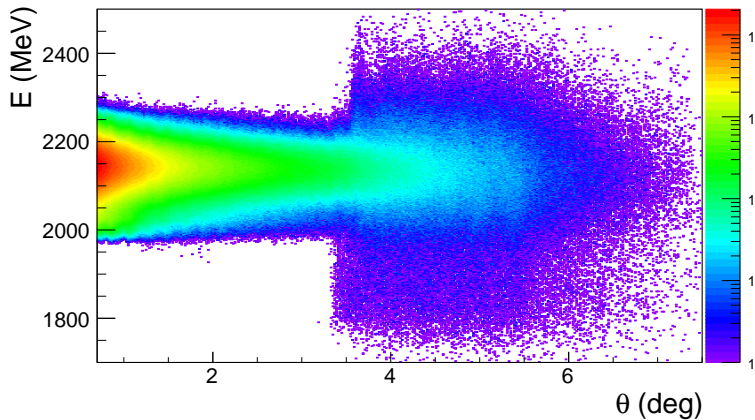
$$t_x = (x_{rec} - x_{center}) / (\text{cell size})$$

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

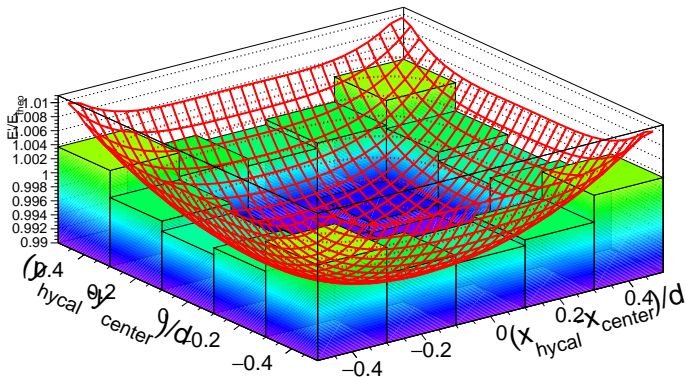
$$E_{corr} = \frac{E_0}{p_0 \cdot (1 + p_1 \cdot t_x^2 + p_2 \cdot t_y^2 + p_3 \cdot t_x^2 \cdot t_y^2 + p_4 \cdot t_x^4 + p_5 \cdot t_y^4)}$$

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

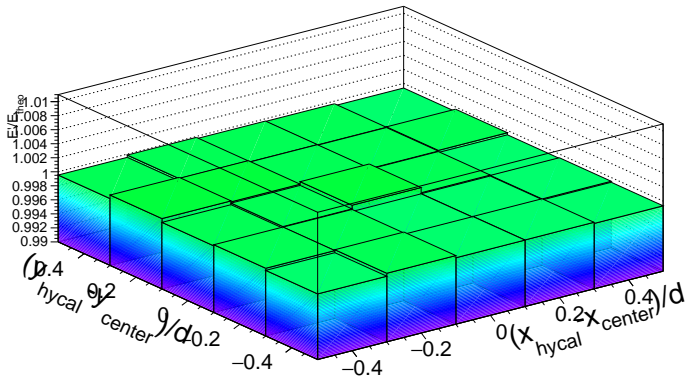




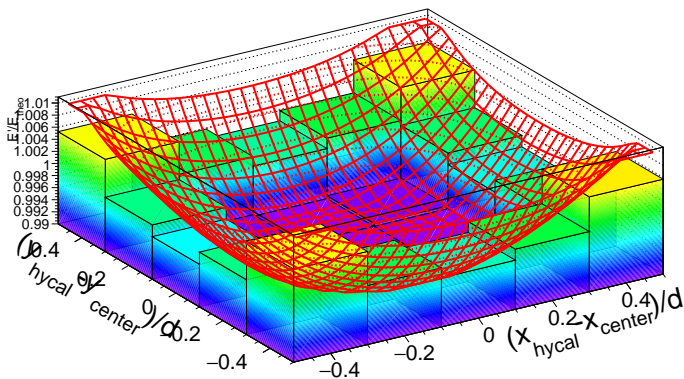
PWO ep



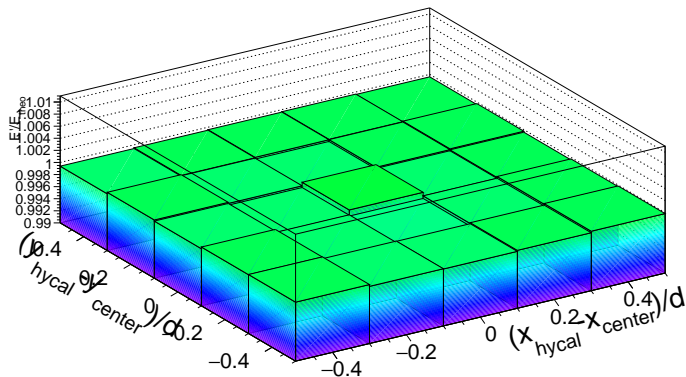
corrected PWO ep



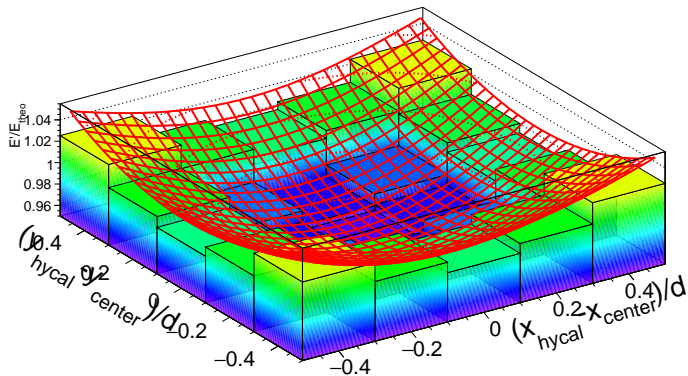
PWO ee



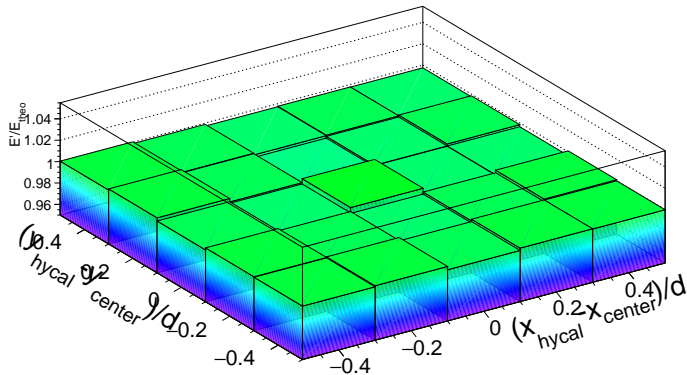
corrected PWO ee



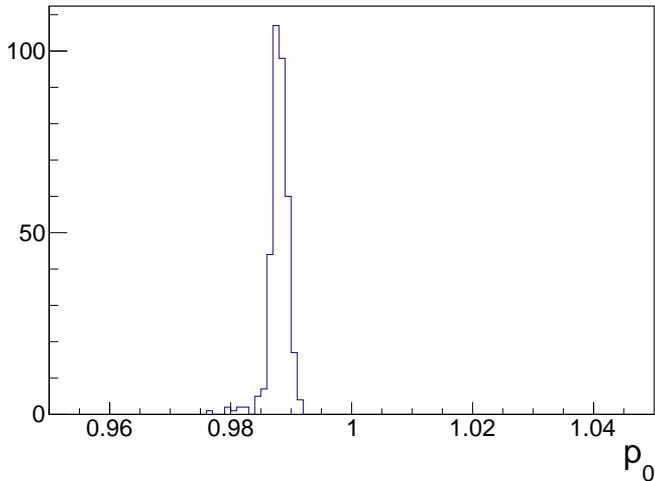
LG ep



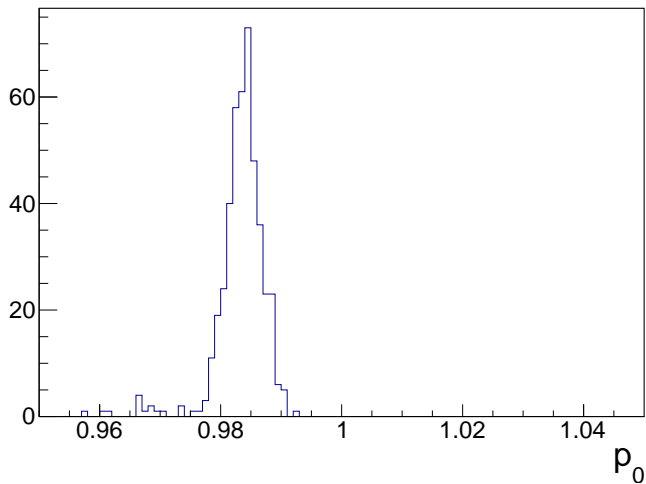
corrected LG ep



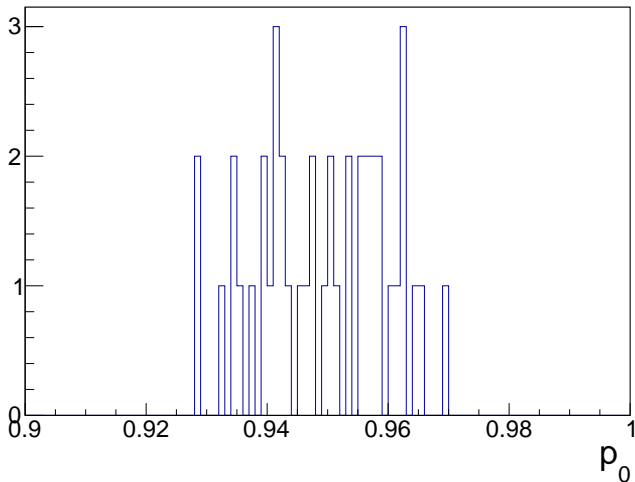
PWO ep



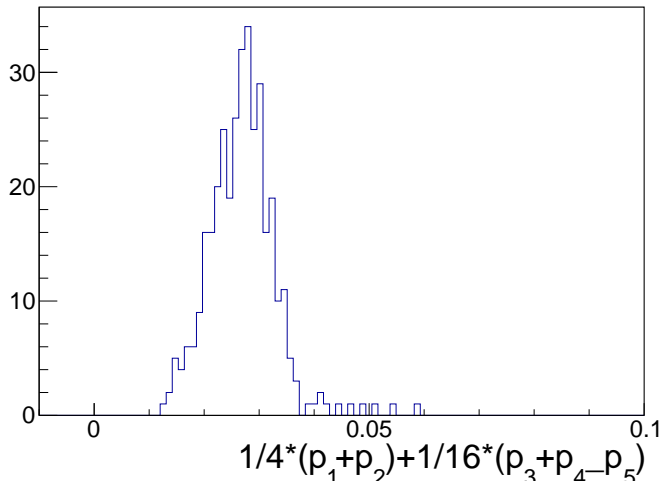
PWO ee



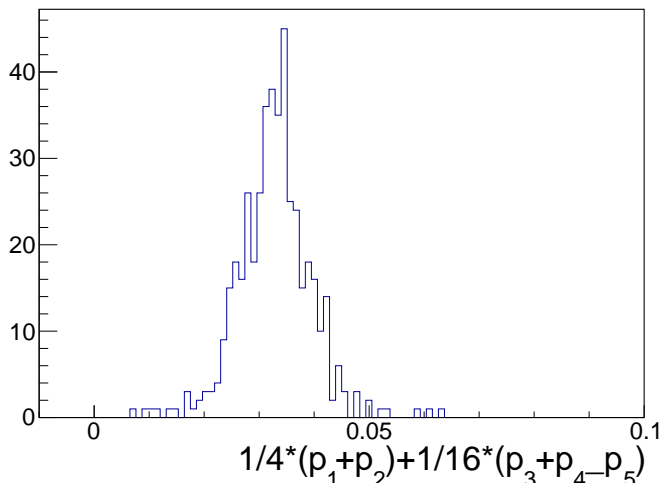
LG ep



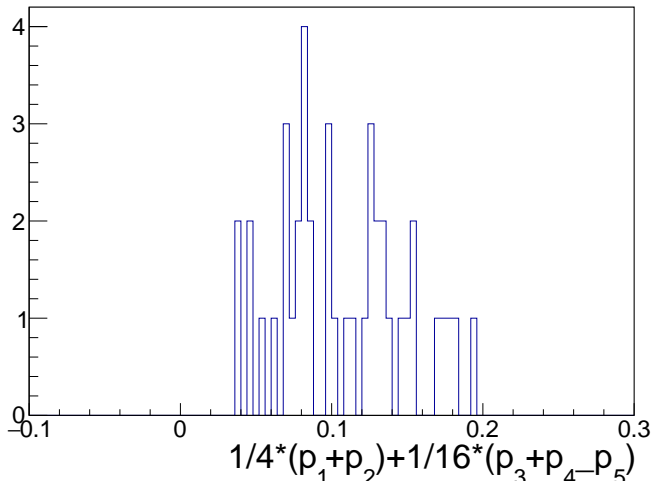
PWO ep



PWO ee



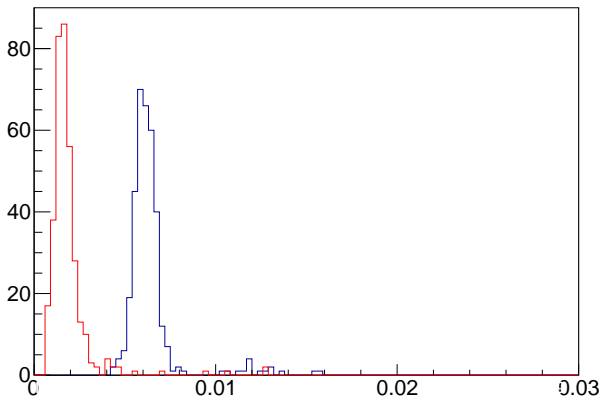
LG ep



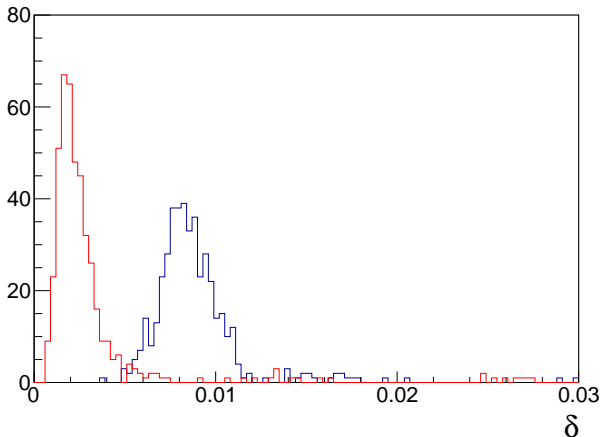
$$\delta = \sqrt{\sum_{i_x, i_y} (\text{data}(i_x, i_y) - 1)^2 / n_{bin}}$$

PWO ep: original \rightarrow corrected

$\langle \delta \rangle = 0.0056 \rightarrow 0.00045$



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



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

