

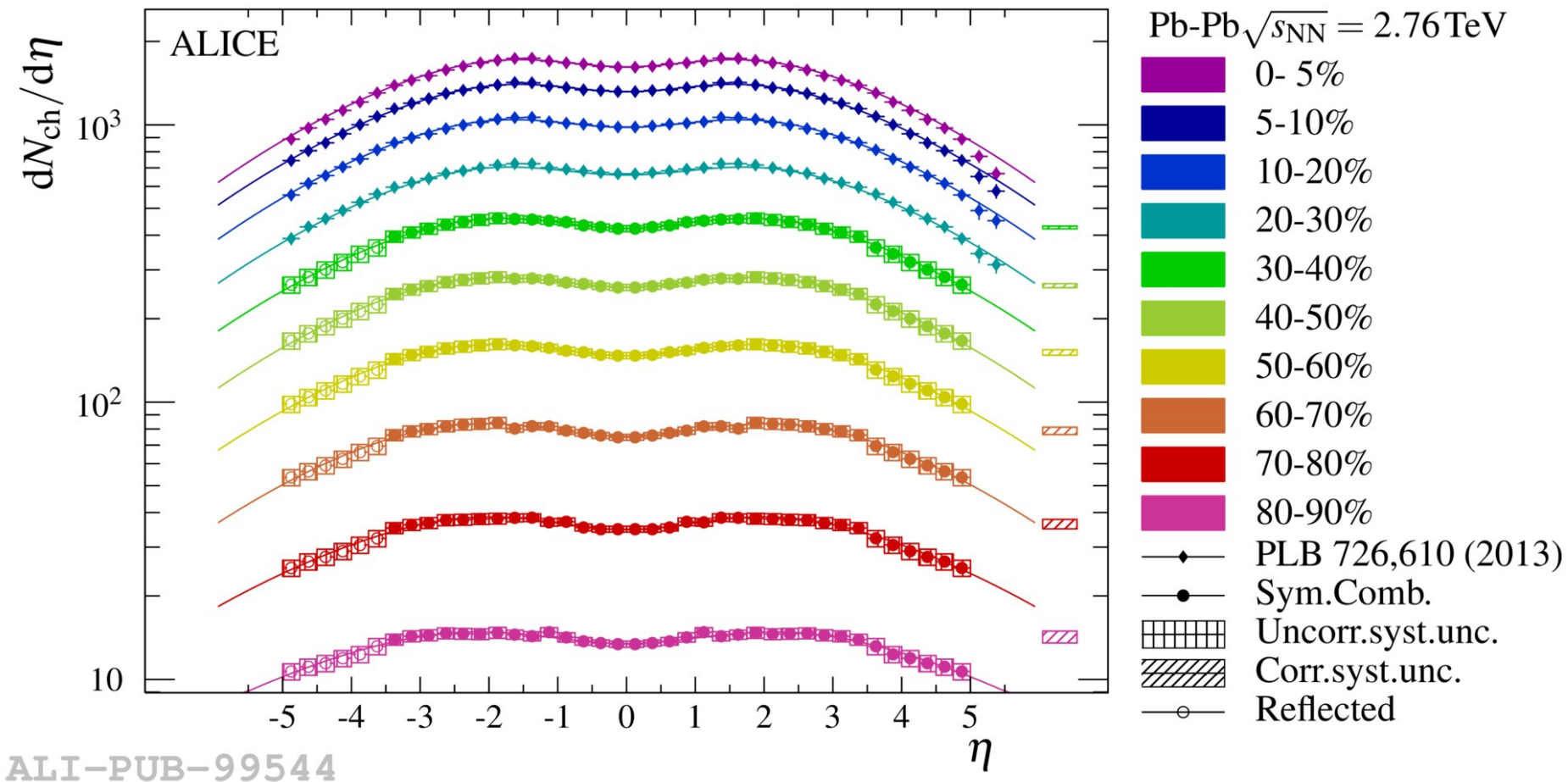
Multiplicity in Pb-Pb collisions

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What did we measure ?

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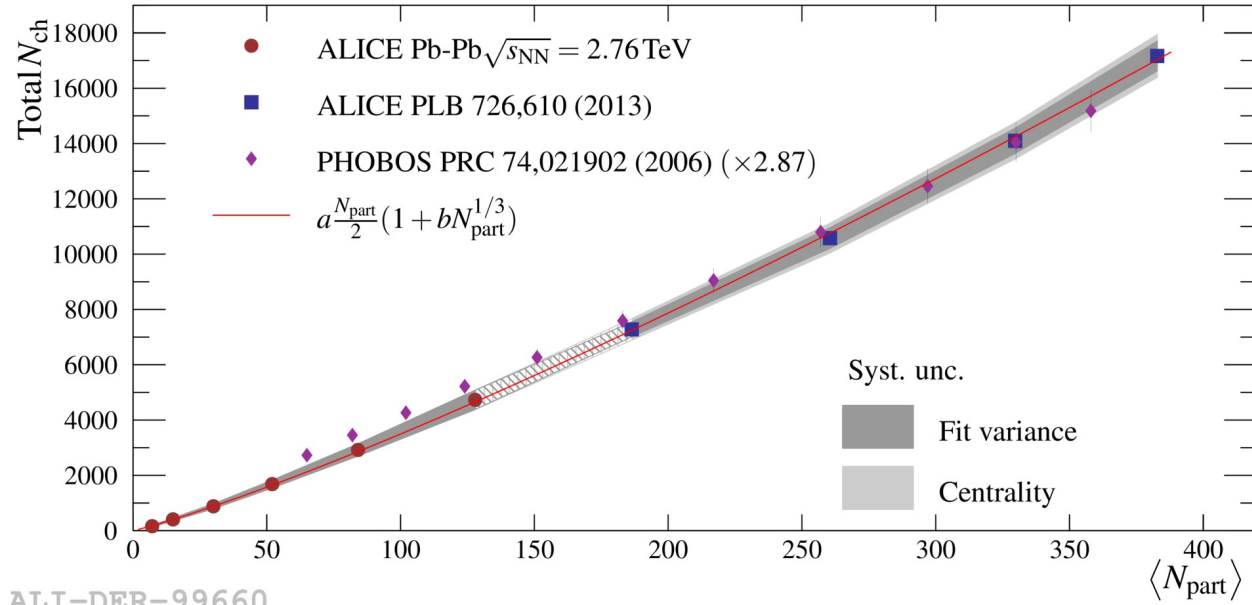
From $dN/d\eta$ to total N_{ch}

$$f_{GG}(\eta; A_1, \sigma_1, A_2, \sigma_2) = A_1 e^{-\frac{1}{2} \frac{\eta^2}{\sigma_1^2}} - A_2 e^{-\frac{1}{2} \frac{\eta^2}{\sigma_2^2}}$$

$$f_T(\eta; y_{beam}, M, A) = A \times \begin{cases} 0 & |\eta| > y_{beam} \\ (y_{beam} + \eta) & \eta < -M \\ (y_{beam} - M) & |\eta| < M \\ (y_{beam} - \eta) & \eta > +M \end{cases}$$

$$f_B(\eta; A, \mu, \sigma) = A \times \begin{cases} e^{-\frac{(\eta+\mu)^2}{2\sigma^2}} & \eta < -\mu \\ e^{-\frac{(\eta-\mu)^2}{2\sigma^2}} & \eta > +\mu \\ 1 & |\eta| < \mu \end{cases}$$

$$f_P(\eta; A, \alpha, \beta, a) = A \frac{\sqrt{1 - 1/[\alpha \cosh(\eta)]^2}}{1 + e^{(|\eta| - \beta)/a}},$$



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N_{ch} = integral between $-y_{beam}$ to y_{beam} of f
 The f_T is used for central values

From total N_{ch} to total multiplicity

- Use a model to get estimate $N_{\text{ch}}/N_{\text{all}}$ ratio