中国科学技术大学
University of Science and Technology of China

Group meeting

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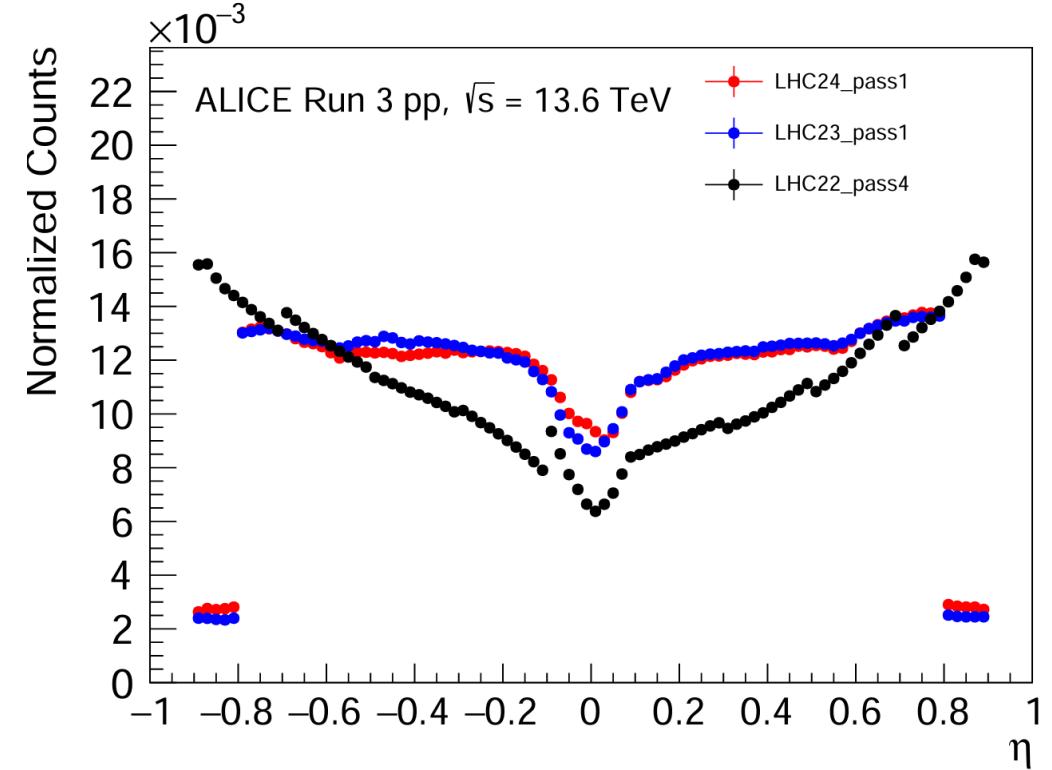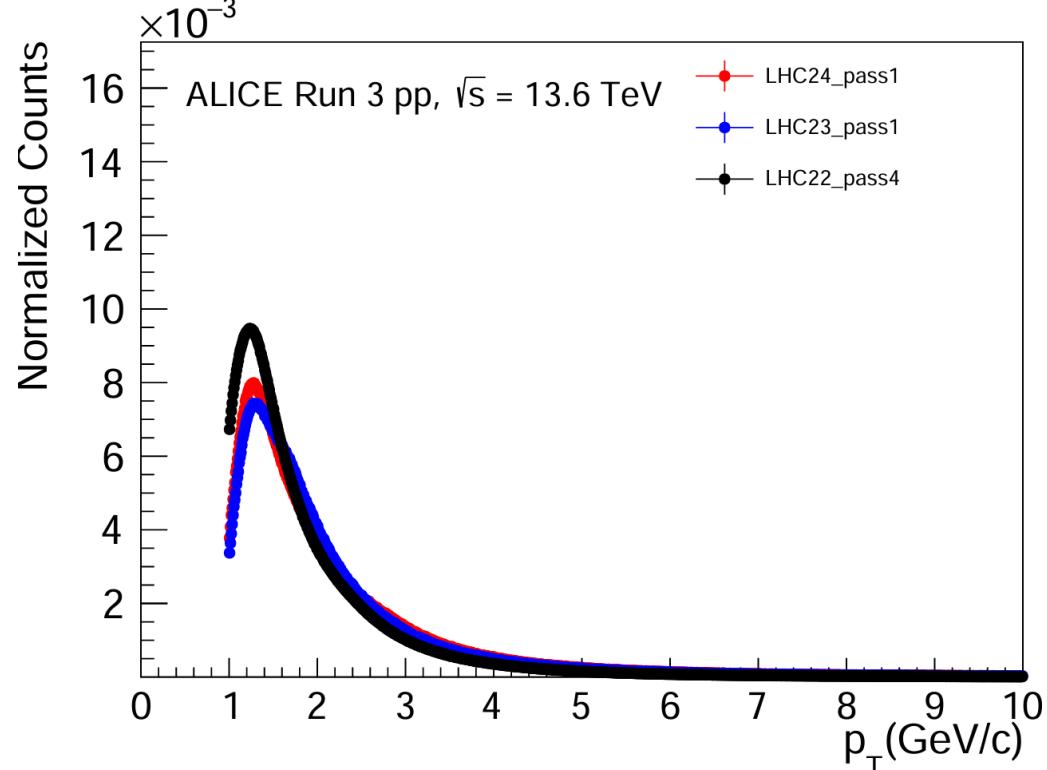
➤ pT and Eta distributions are different for different year.

PID check
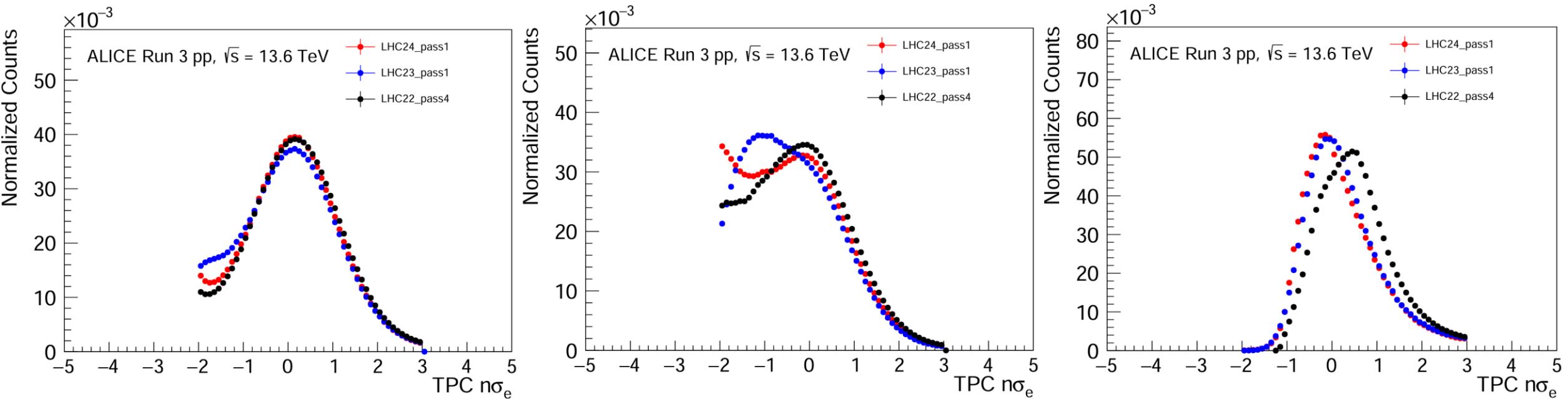
➢ The PID distributions are different in middle and high pT.

Signal extraction

pT < 16 GeV/c

LHC24

LHC23

$N_{J/\psi}$=381368±804
$N_{\psi(2S)}$=18561±484
Chi2/ndf=9.36

$N_{J/\psi}$=384013±818
$N_{\psi(2S)}$=21849±504
Chi2/ndf=10.89
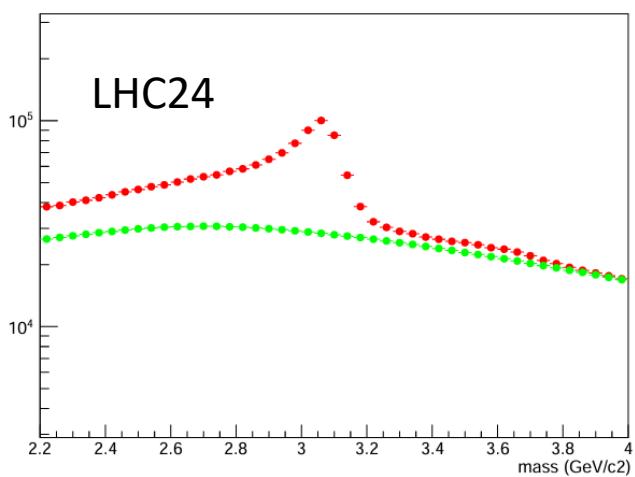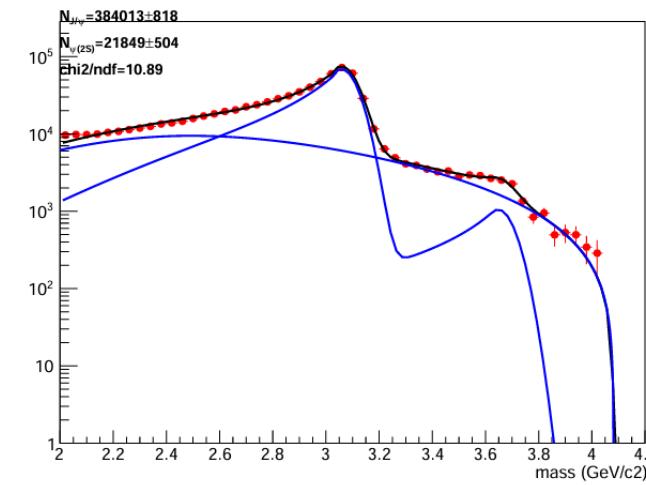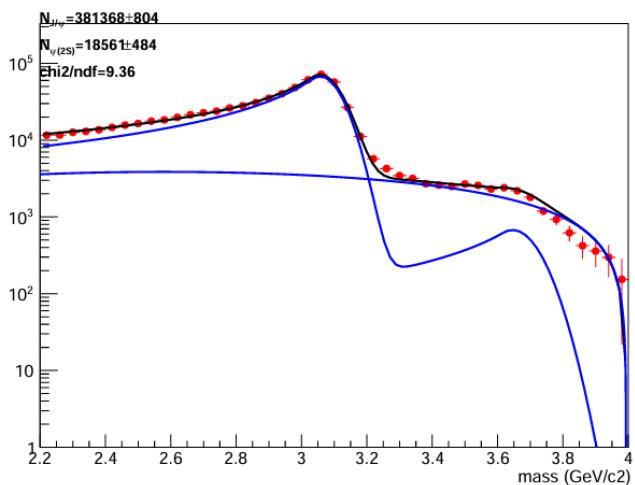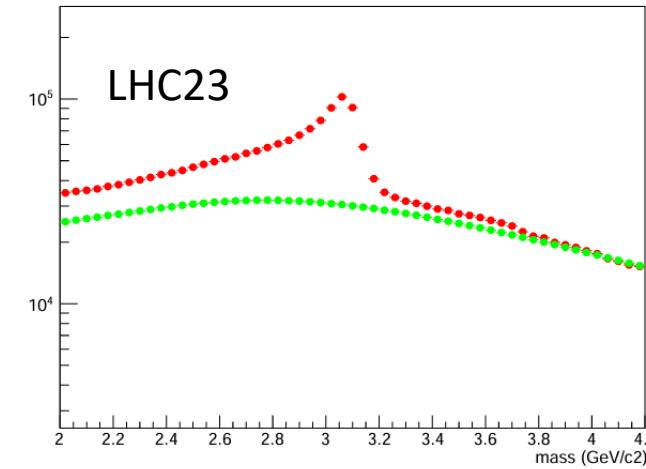
MC Fit
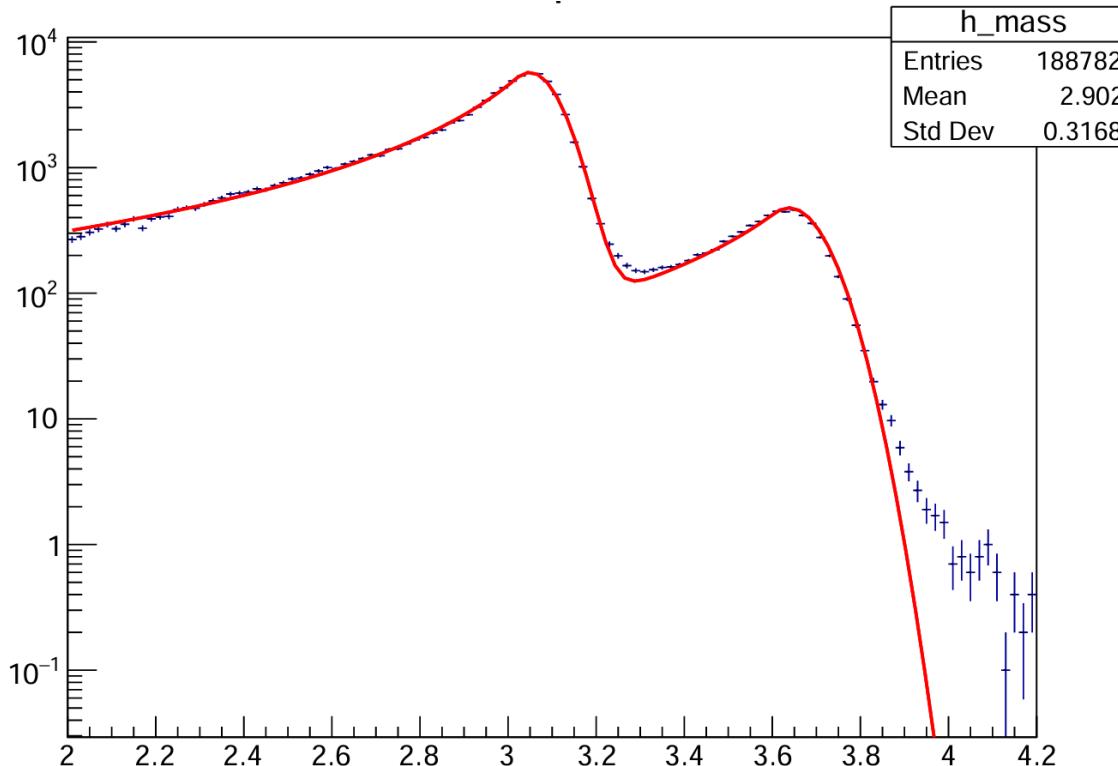
- Fit the signal shape obtained from momentum smear using CB function.
- There's a tail on the right side.

ExpGaussExp

$$
\begin{aligned}
f(x; \bar{x}, \sigma, k_L, k_H) &= e^{\frac{k_L^2}{2} + k_L \left(\frac{x - \bar{x}}{\sigma} \right)}, & \text{for} \quad & \frac{x - \bar{x}}{\sigma} \leq -k_L \\
&= e^{-\frac{1}{2} \left(\frac{x - \bar{x}}{\sigma} \right)^2}, & \text{for} \quad & -k_L < \frac{x - \bar{x}}{\sigma} \leq k_H \\
&= e^{\frac{k_H^2}{2} - k_H \left(\frac{x - \bar{x}}{\sigma} \right)}, & \text{for} \quad & k_H < \frac{x - \bar{x}}{\sigma}
\end{aligned}
$$