Activity at Jeonbuk

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JBNU group

- Members : Eun-Joo Kim, Jun-Lee Kim(JL)
- Analysis
  - Ridge in pp@13 TeV (JL, BK, DJ)
  - f0(980) resonance in pp, p-Pb, Pb-Pb (JL, BK)

Plan : slide from March, 2017

APPLICATION
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CURRENT STATUS
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PLAN
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BACK-UP
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RESEARCH PLAN

- Short term physics topics in 2017-2018
  - Spectra and cross-section measurements for light flavor resonances
  - Comparison of the above results with the results of the central diffractive events
- Long term physics topic after 2018
  - Flows of heavy flavors
  - Jet Physics with two-particle correlations
- ALICE upgrade project : collaborative effort within KoALICE on ITS upgrade project

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Summary & Outlook from Jan. 2019

- Multiplicity : paper submission and publication
- Light flavor
  - Measuring $\left\langle \dfrac{dN_{f_0(980),f_2(1270)}}{d\eta} \right\rangle / \left\langle \dfrac{dN_{ch}}{d\eta} \right\rangle$ to check the strangeness enhancement in the small system
  - Try to analyze p-Pb and Pb-Pb data eventually
  - Apply for SQM parallel talk
  - Paper preparation and submission
- Ridge
  - The 13th High p_T workshop
  - Paper preparation and submission
- ITS
  - Jan-Feb 2019 : commissioning at CERN
  - Mar-Sep 2019 : calibration, remote work

- Multiplicity : paper submission and publication
  - Paper submission : February 2020
  - Publication : 2020?

Status : Light flavor

- Light flavor

  - Measuring $\left\langle \frac{dN_{f_0(980),f_2(1270)}}{d\eta} \right\rangle / \left\langle \frac{dN_{ch}}{d\eta} \right\rangle$ to check the strangeness enhancement in the small system

  - Try to analyze p-Pb and Pb-Pb data eventually

  - Apply for SQM parallel talk

  - Paper preparation and submission

f_0 resonance : Analysis

- Partially approved for pp@13 TeV (2019 summer conference)
  - Minimum Bias result : approved
  - Multiplicity Dependent result : has not been approved

- For other collision systems : analysis on-going
  - p-Pb@5.02, 8.16 TeV : Analysis note uploaded in Dec. 05, 2019
  - https://alice-notes.web.cern.ch/node/1018
  - Pb-Pb@5.02 TeV : analysis on-going
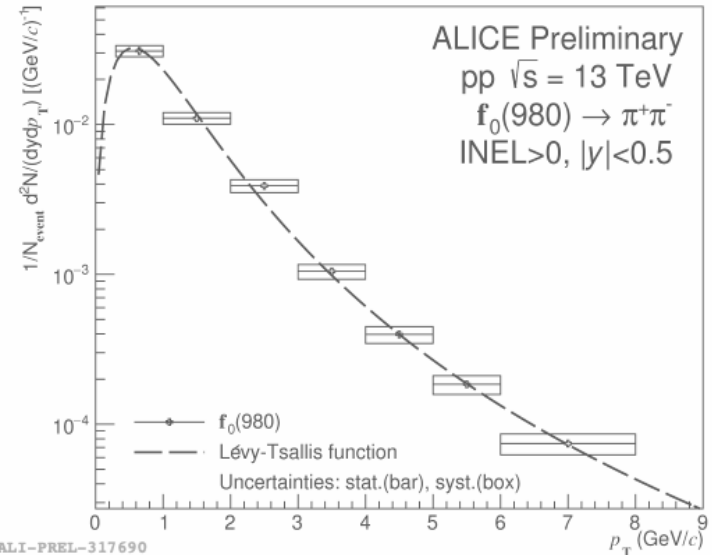
- Goal : Hard Probe 2020
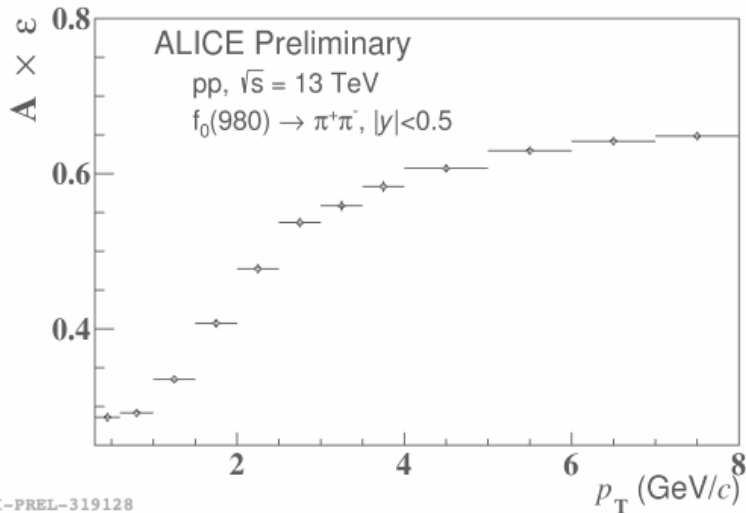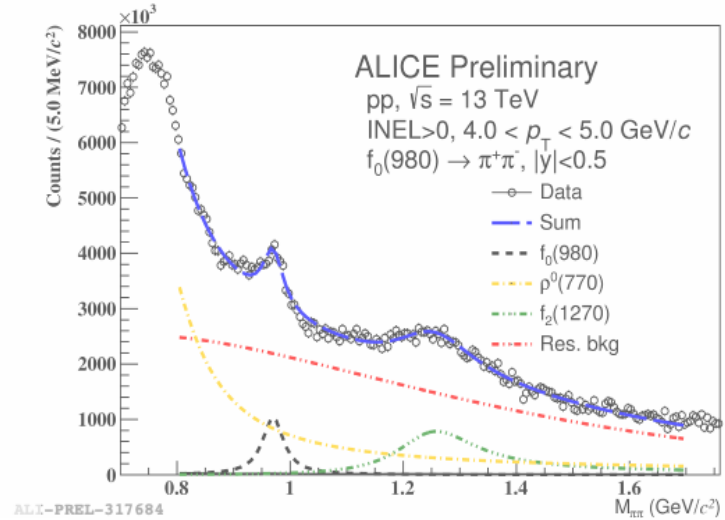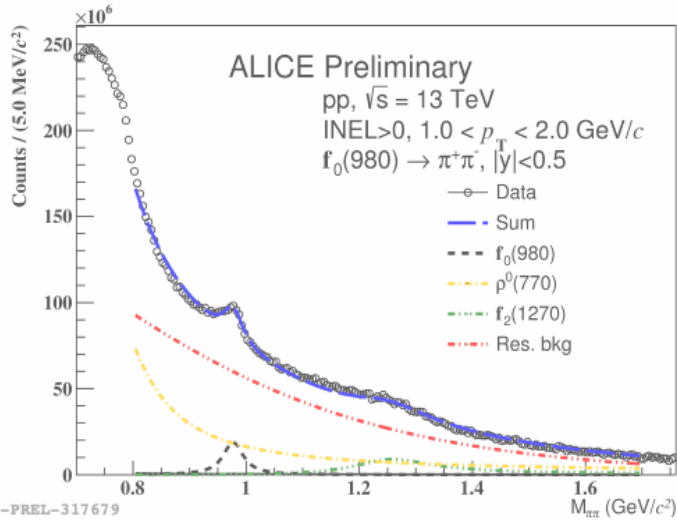 - Approval & oral presentation

f_0 resonance : Contributions

- 13 presentations at CERN internal meeting

- International Conference
  - 1 Poster presentation at SQM 2019 in Italy
- 1 oral presentation at KPS spring meeting

- Two Analysis Notes : uploaded
  - pp@13 TeV, p-Pb@5.02, 8.16 TeV

Signal extraction & p_T spectra in pp@13 TeV
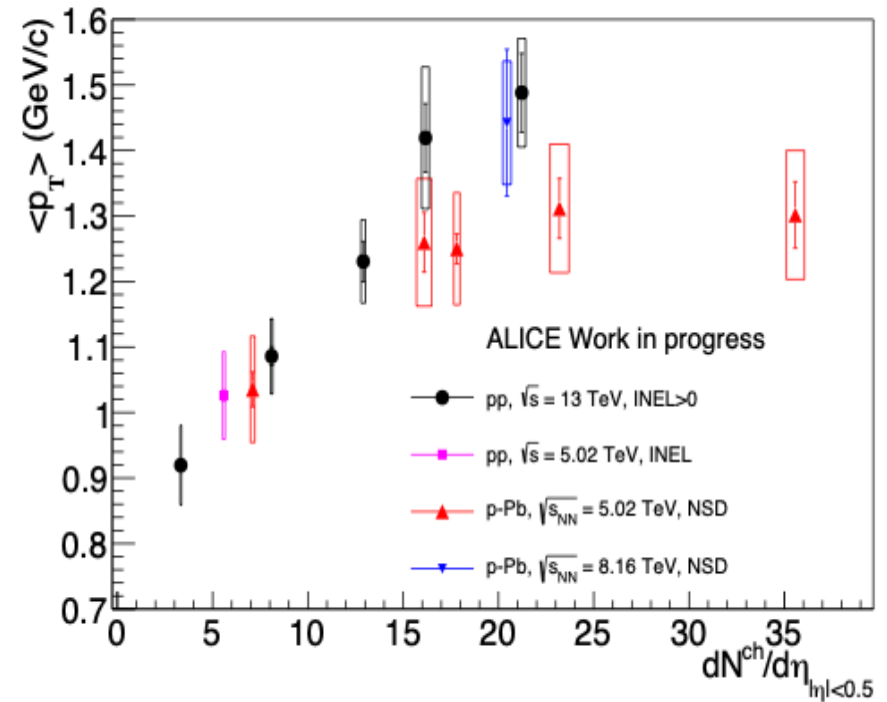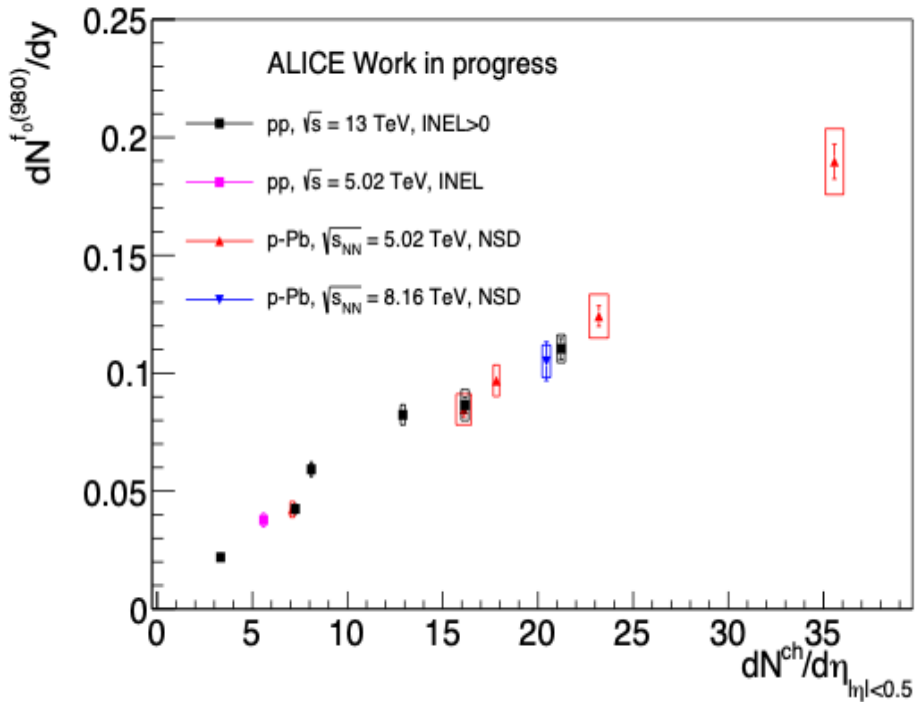
- same tendency (in terms of collisions systems and energy) ???
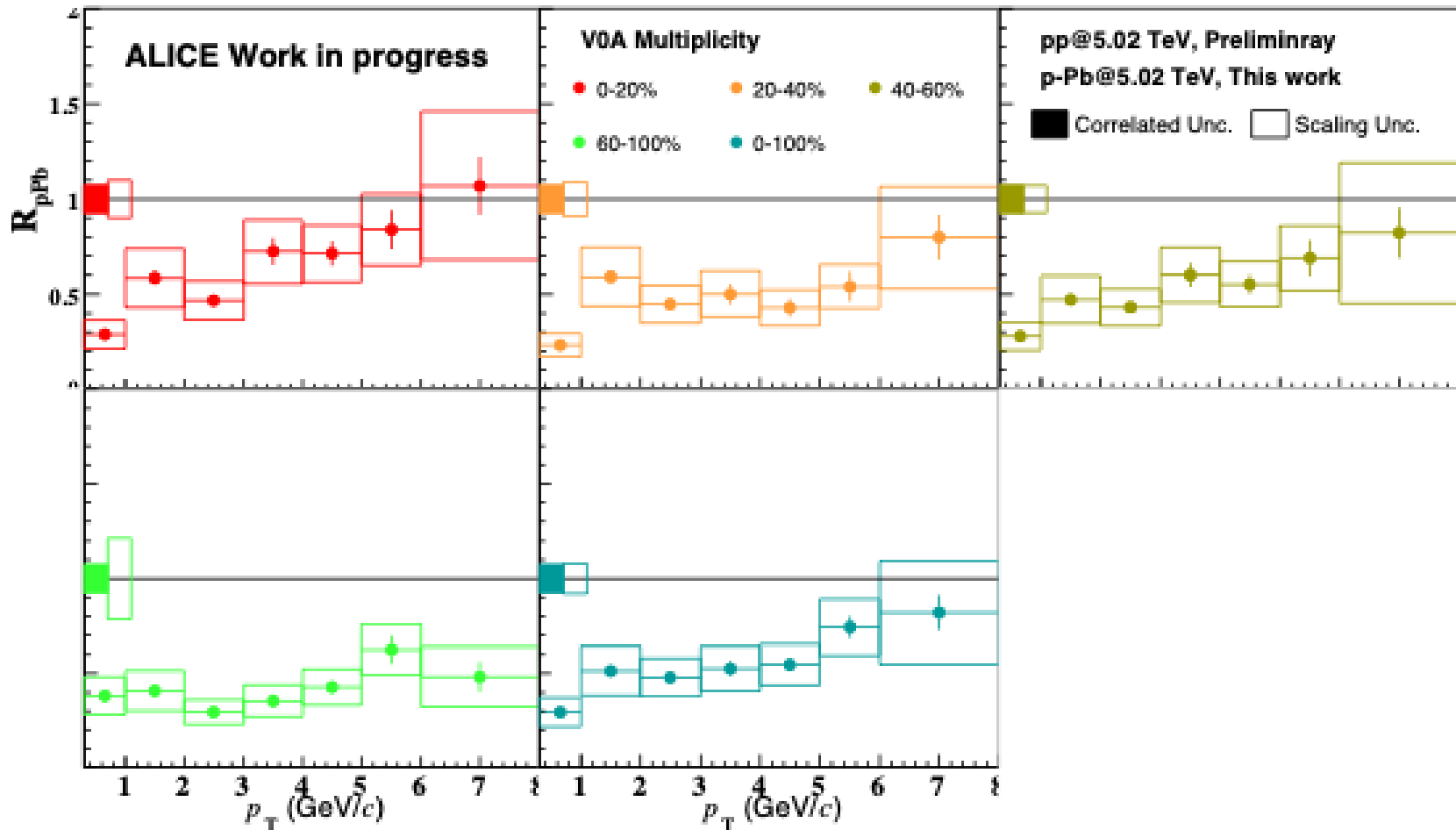
- suppression???
- need double check & further study

f_0 : Ratio to charged pion
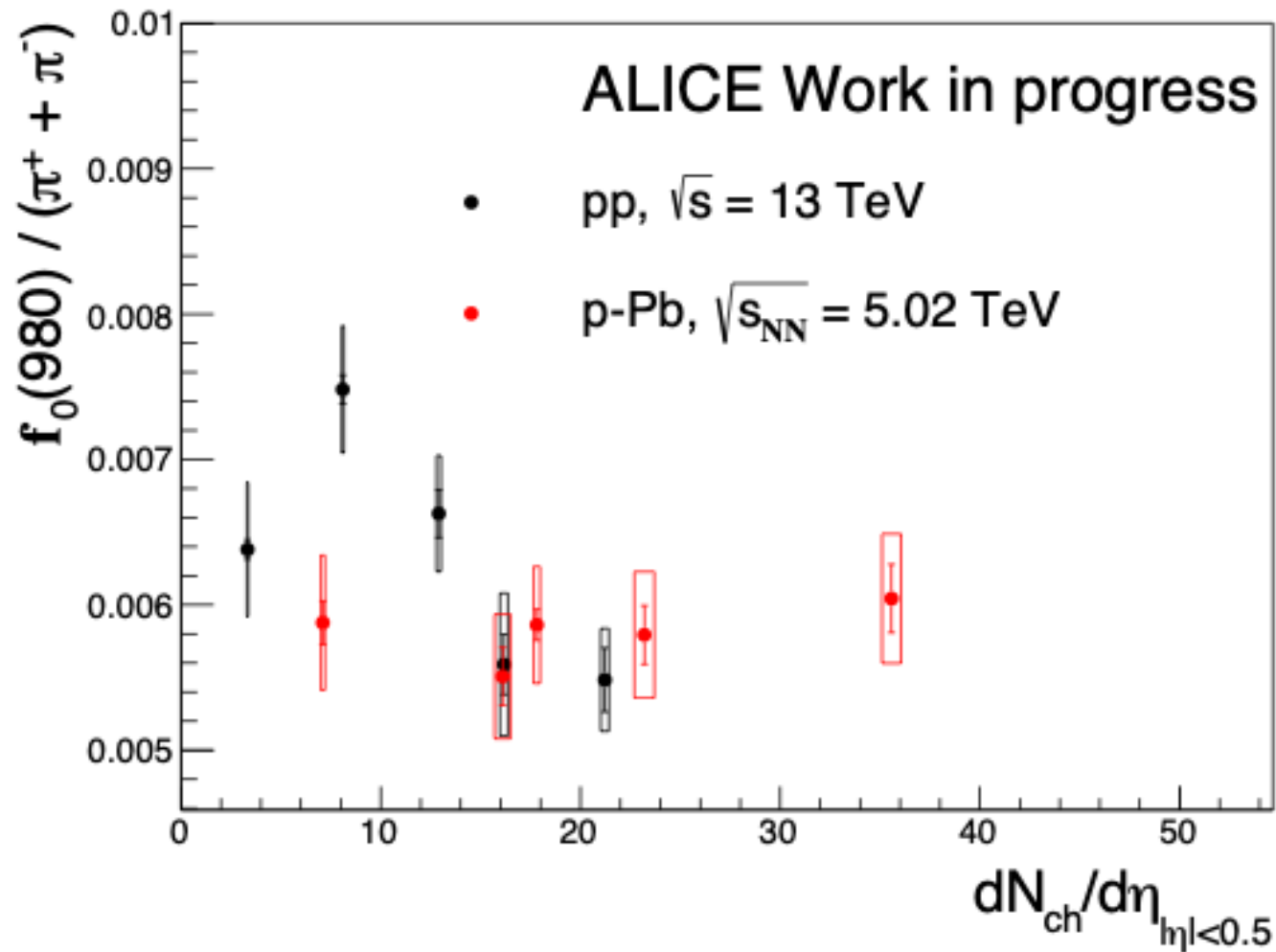
- No strong strange enhancement ???
- pp@5.02, p-Pb@8.16 TeV will be added

Status : Ridge

- Ridge
  - The 13$^{\text{th}}$ High p_T workshop
  - Paper preparation and submission

Ridge : Analysis

- Approved figures for 2019 summer conferences

- Leading hadron selection : new
- Leading jet selection : under study
- Paper draft & proposal : under preparation

Ridge : Contributions

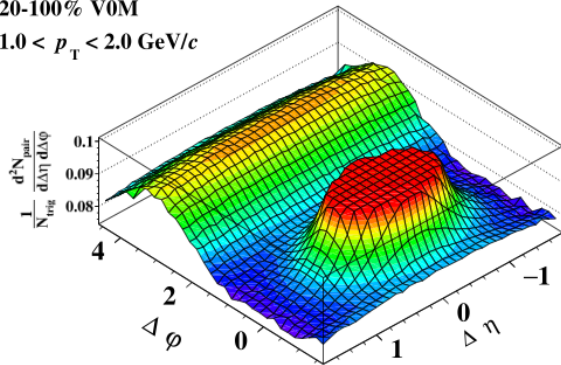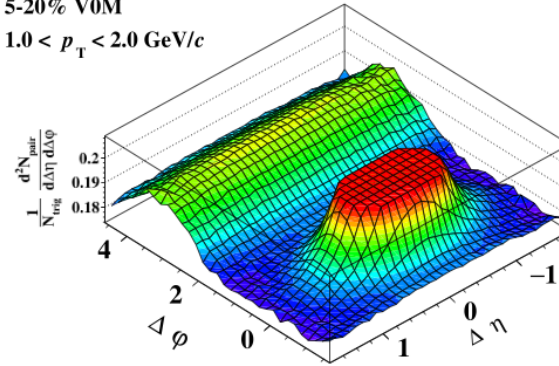- 5 presentations at CERN internal meeting

- International Conference
    - 1 Poster presentation at Initial State 2019 in NY
    - 1 oral presentation at EPS-HEP 2019 in Belgium : Proceeding (PoS)
- 1 oral presentation at KPS fall meeting

- Analysis Notes : uploaded in April 18, 2019
    - https://alice-notes.web.cern.ch/node/915

- The long-range correlations is not seen in the low multiplicity classes
- In the high multiplicity class, the correlations is clearly seen

- The long-range $\Delta\varphi$ distributions between ALICE and CMS are comparable each other even with different multiplicity definition

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Ridge : Approved Figures

ALI-PREL-319174

- The associated yield are comparable between ALICE and CMS, which shows possibility of ridge analysis within ALICE acceptance

Ridge : Approved Figures
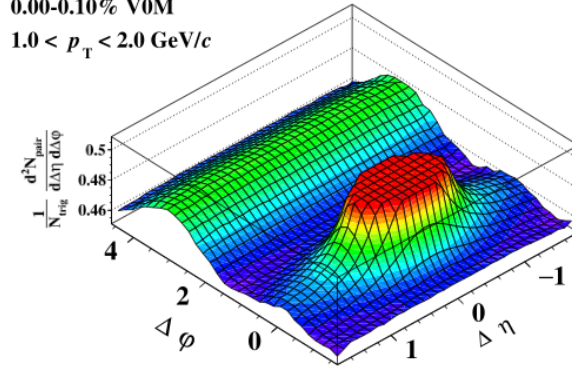

ALICE Preliminary, pp $\sqrt{s}$ = 13 TeV

0.00-0.10% V0M

$1.0 < p_T < 2.0$ GeV/c

$p_T^{Lead} > 3.0$ GeV/c

ALICE Preliminary, pp $\sqrt{s}$ = 13 TeV
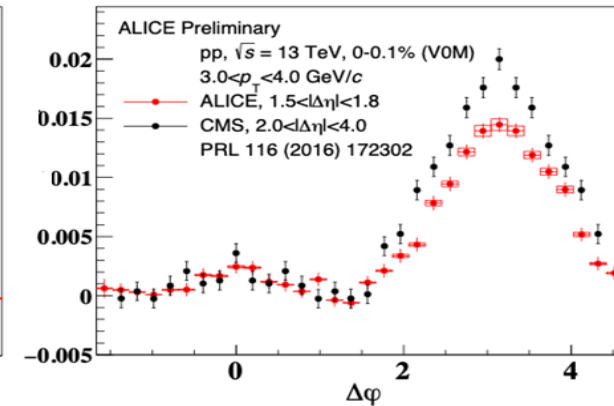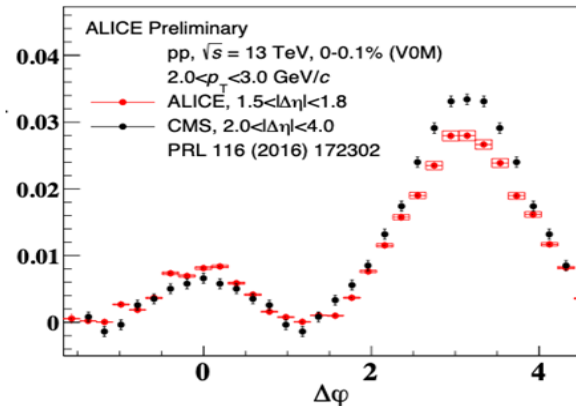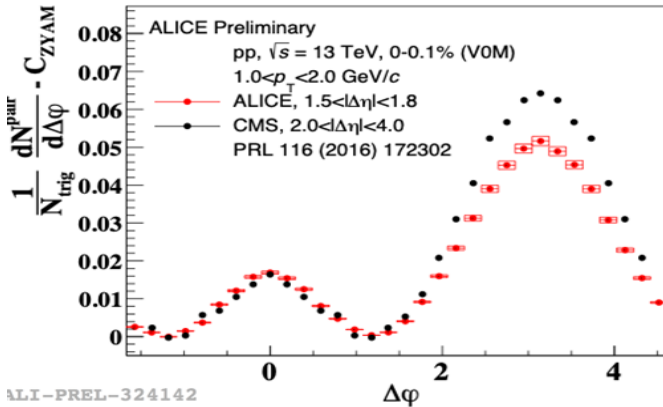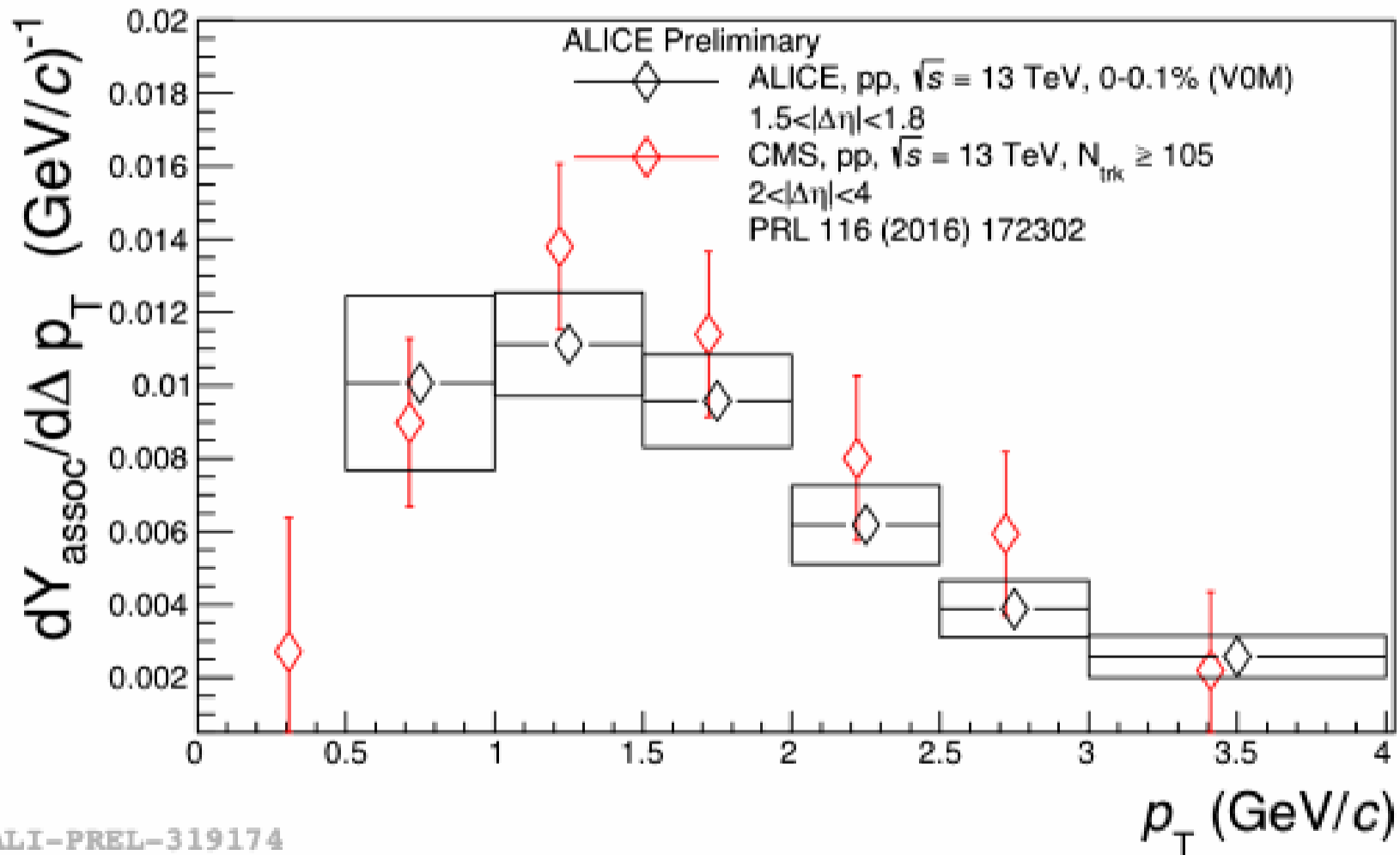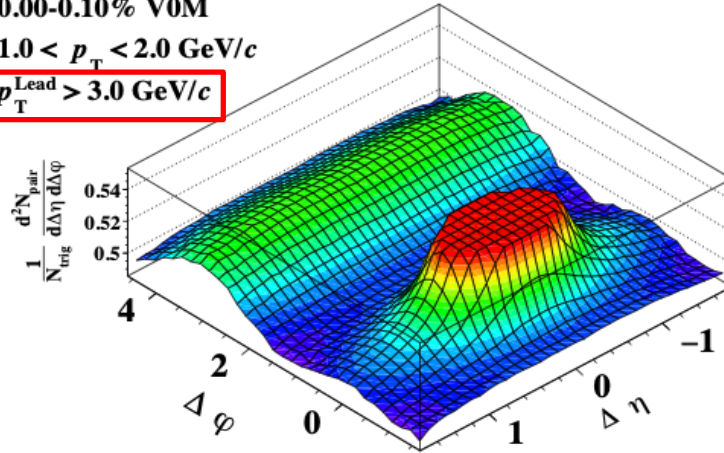
0.00-0.10% V0M

$1.0 < p_T < 2.0$ GeV/c

$p_T^{Lead} > 7.0$ GeV/c

ALI-PREL-319168

ALICE Preliminary

pp, $\sqrt{s}$ = 13 TeV, 0-0.1% (V0M)

$1.0 < p_T < 2.0$ GeV/c
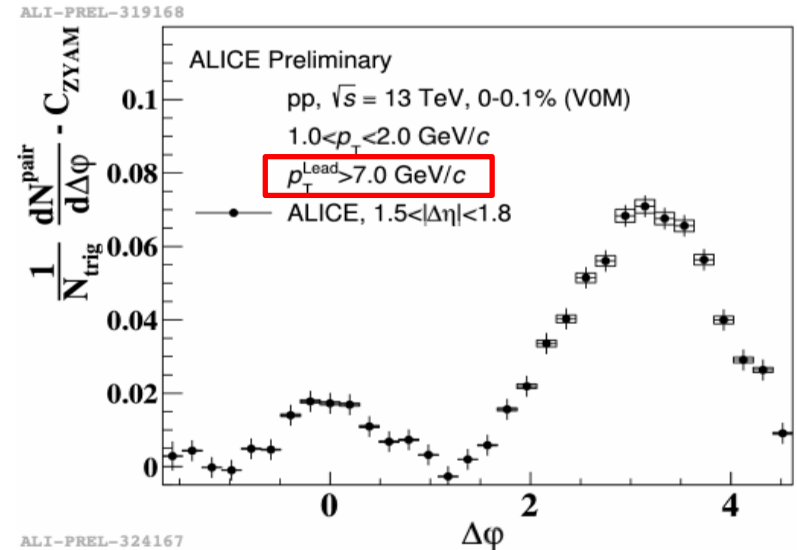
$p_T^{Lead} > 3.0$ GeV/c

— ALICE, $1.5 < |\Delta\eta| < 1.8$

ALICE Preliminary

pp, $\sqrt{s}$ = 13 TeV, 0-0.1% (V0M)

$1.0 < p_T < 2.0$ GeV/c

$p_T^{Lead} > 7.0$ GeV/c

— ALICE, $1.5 < |\Delta\eta| < 1.8$

ALI-PREL-324167
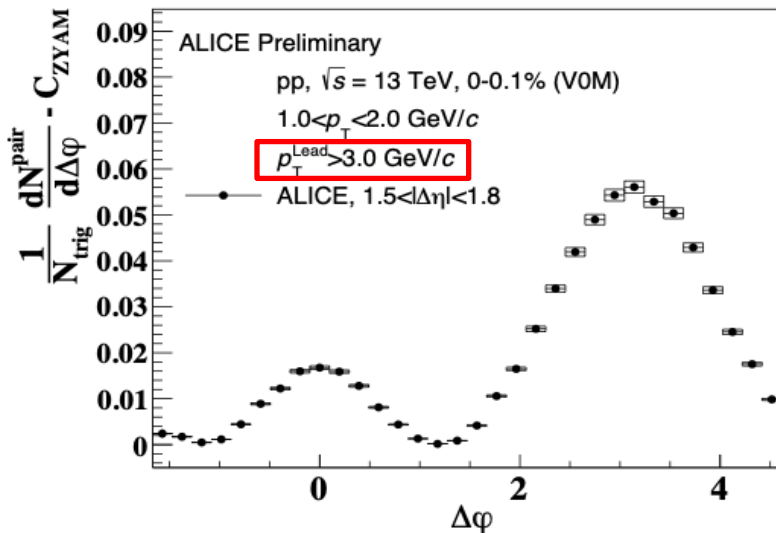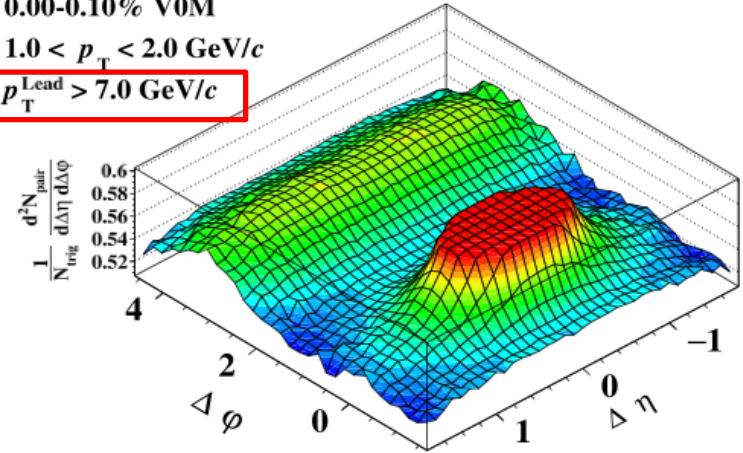
- With Leading hadron selection, long-range correlations can be seen

ALI-PREL-319189
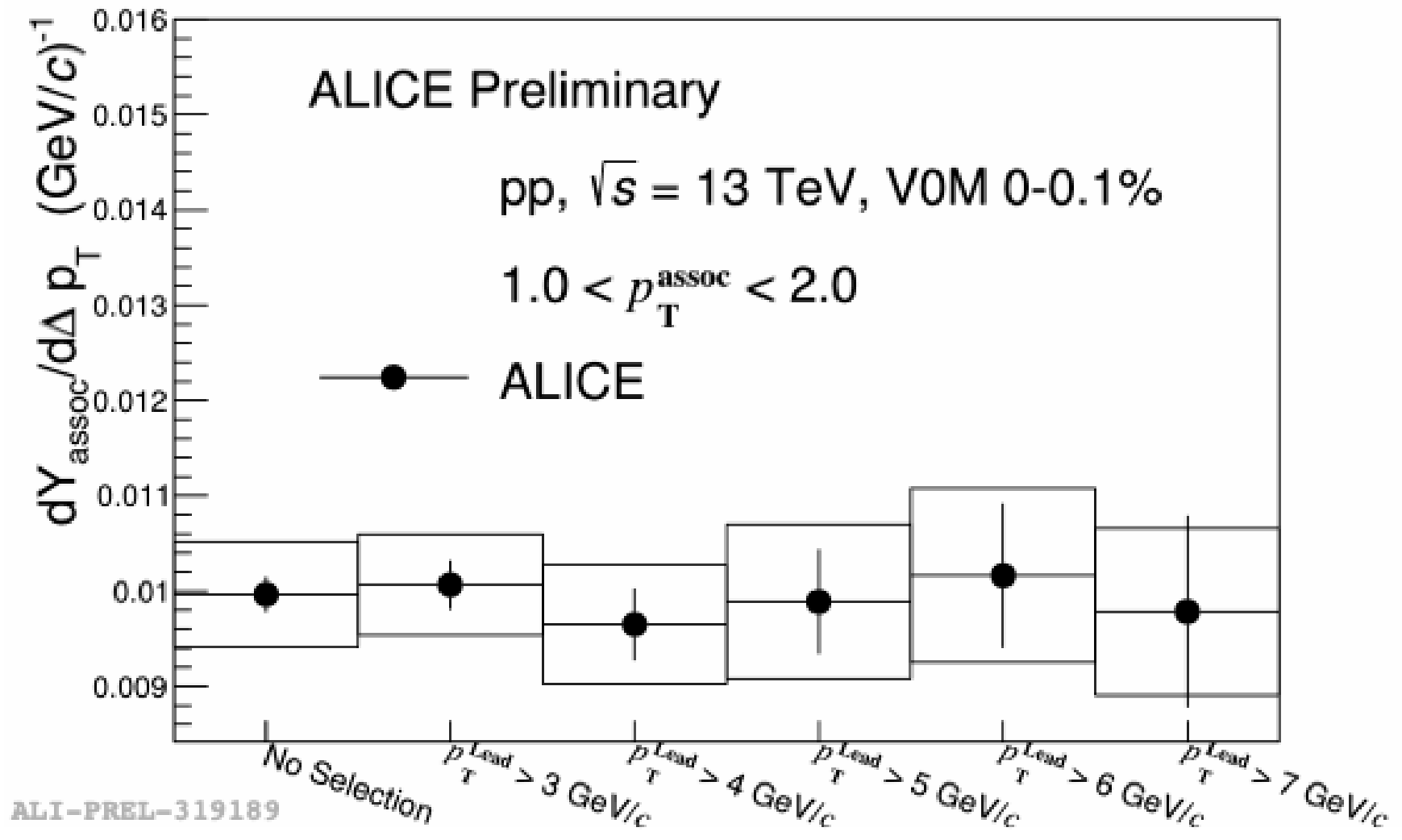
- The associated yields are consistent with various leading hadron selection

RidgeLT Cent:0-0.1 TPt:1-2 APt:1-2 LPPt:0.2-20
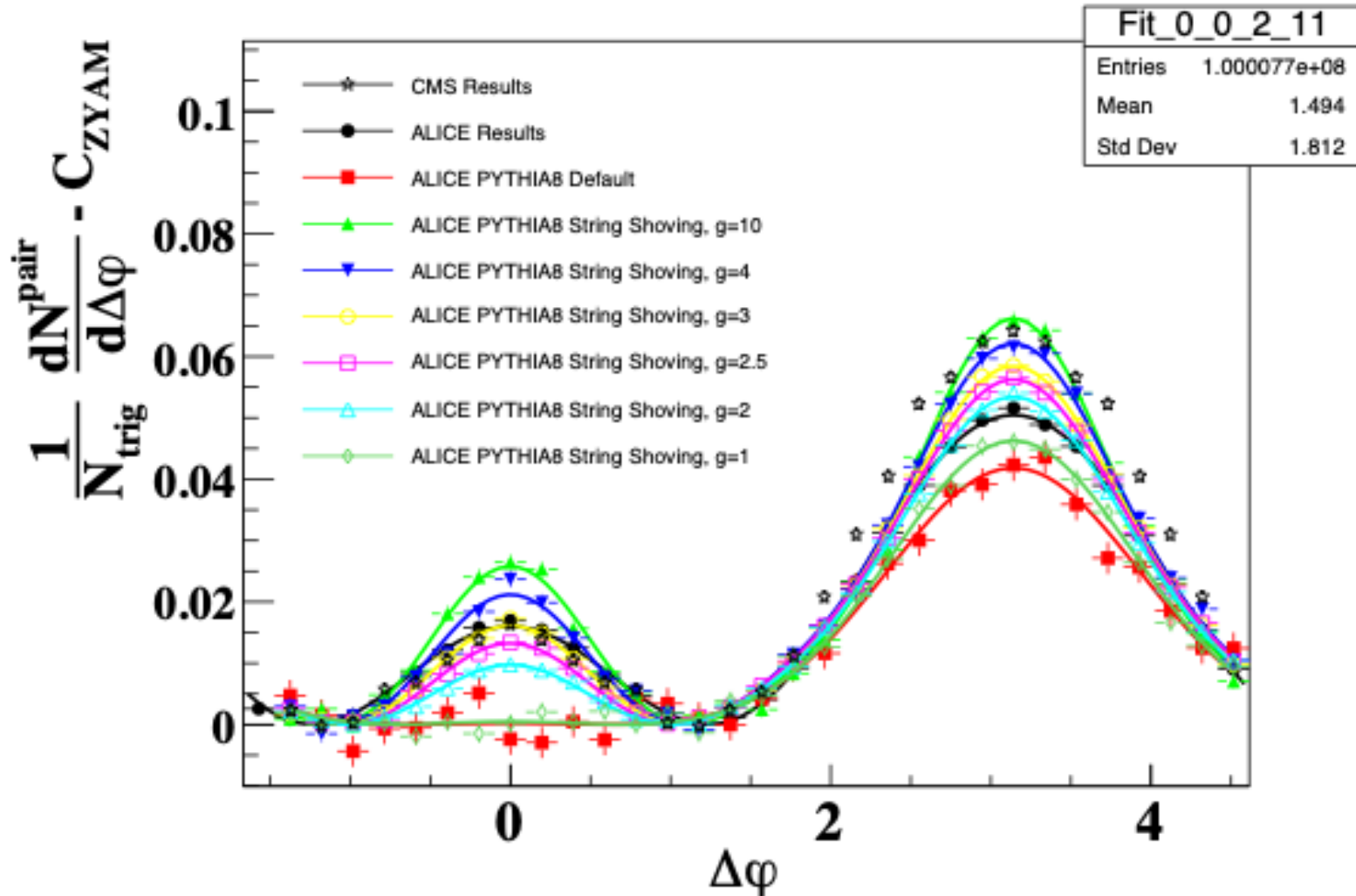
- Dedicated model study is ongoing with the help of KIAF computing farm

Status : ITS (service work)

- ITS
  - Jan-Feb 2019 : commissioning at CERN
  - Mar-Sep 2019 : calibration, remote work

- ITS Quality Check
  - Participation in QC works since August 2019
  - QC Analysis software package was installed in October 2019

Summary & Outlook

- Light flavor
  - R_{pPb} : under further study
  - Preparation of next approval (maybe Hard Probe 2020)
  - Pb-Pb collision system : keep going

- Ridge
  - Finalized analysis with jet reconstruction & selection
  - paper draft : January - April 2020
  - paper proposal : with jet implementation & selection

- ITS Quality Check
  - contributions???