# PHOBOS's dN/deta Publication

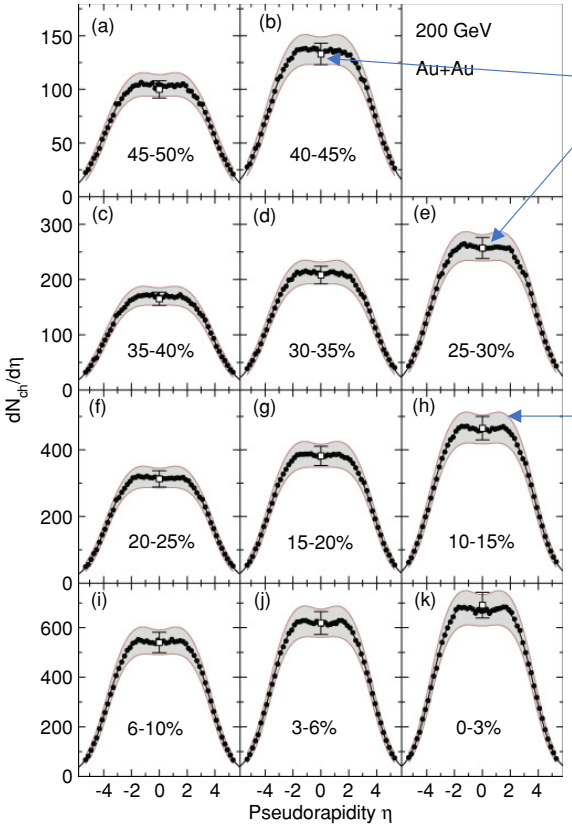


FIG. 18. (Color online) Same as Fig. 17 but for Au + Au collisions at $\sqrt{s_{NN}} = 200$ GeV. The solid curves represent best fits to the data over the full $\eta$ range using Eq. (14) and the shaded regions represent 90%-confidence-limit systematic errors. The open points were obtained by the tracklet analysis in the range $|\eta| < 1$.

- The most sophisticated analysis is tracklet counting method represented by open points in Fig.18. The statistical error is 5 ~ 10%.
- Solid data points are hit counting methods.
- In any case, the systematic error ~15% dominates.

TABLE V. Summary of the midrapidity $\frac{dN_{\rm ch}}{d\eta}|_{|\eta|<1}$ charged-particle multiplicity for Au + Au collisions obtained from the tracklet analysis. The data are listed as a function of centrality expressed in percentage of the total reaction cross section for all four energies. Columns 2 and 4 list derived quantities; namely, the number of participants as well as the midrapidity density normalized to the number of participant pairs $N_{\rm part}/2$. The errors are systematic errors at 90% confidence level; statistical errors are negligible. Note that the table continues an overleaf.

| Au + Au | $\sqrt{s_{NN}} = 200$ GeV | | $y_{\rm beam} = 5.361$ |
|---|---|---|---|
| Bin | $N_{\rm part}$ | $\frac{dN}{d\eta}\|_{\|\eta\|<1}$ | $\frac{dN_{\rm ch}/d\eta\|_{\|\eta<1\|}}{N_{\rm part}/2}$ |
| 0%–3% | 361 ± 11 | 691 ± 52 | 3.82 ± 0.31 |
| 3%–6% | 331 ± 10 | 619 ± 46 | 3.74 ± 0.30 |
| 6%–10% | 297 ± 9 | 540 ± 41 | 3.64 ± 0.30 |
| 10%–15% | 255 ± 8 | 465 ± 35 | 3.65 ± 0.30 |
| 15%–20% | 215 ± 7 | 384 ± 29 | 3.57 ± 0.29 |
| 20%–25% | 180 ± 7 | 313 ± 24 | 3.47 ± 0.30 |
| 25%–30% | 150 ± 6 | 257 ± 19 | 3.42 ± 0.29 |
| 30%–35% | 124 ± 6 | 208 ± 16 | 3.37 ± 0.30 |
| 35%–40% | 101 ± 6 | 165 ± 12 | 3.25 ± 0.31 |
| 40%–45% | 82 ± 6 | 133 ± 10 | 3.25 ± 0.34 |
| 45%–50% | 65 ± 6 | 100 ± 8 | 3.10 ± 0.38 |
| 50%–55% | 49 ± 5 | 73 ± 5 | 2.98 ± 0.37 |
| 55%–60% | 37 ± 4 | 54 ± 4 | 2.88 ± 0.39 |
| 60%–65% | 28 ± 3 | 38 ± 3 | 2.78 ± 0.40 |
| 65%–70% | 20 ± 3 | 27 ± 2 | 2.68 ± 0.41 |