

## LongRange Correlations Using Claude's Suggestion

Profile histograms are made for following quantities as function of reference multiplicity ( $m$ ) for minbias events. It is obtained for  $|\eta|=0.5$

Forward Multiplicity  $n_f$  and  $n_f * n_f$

Backward Multiplicity  $n_b$  and  $n_b * n_f$

From the profile histogram for each centrality bin dispersions in backward-forward and forward-forward are obtained for each  $m$ .

$$\begin{aligned}\langle D_{ff}^2 \rangle &= n_f * n_f(m) - n_f^2(m) \\ \langle D_{bf}^2 \rangle &= n_b * n_f(m) - n_f(m) n_b(m)\end{aligned}$$

Each  $m$  is given properly normalized with the no of events.

Fig.1

Profile histograms of all the quantities used in the analysis

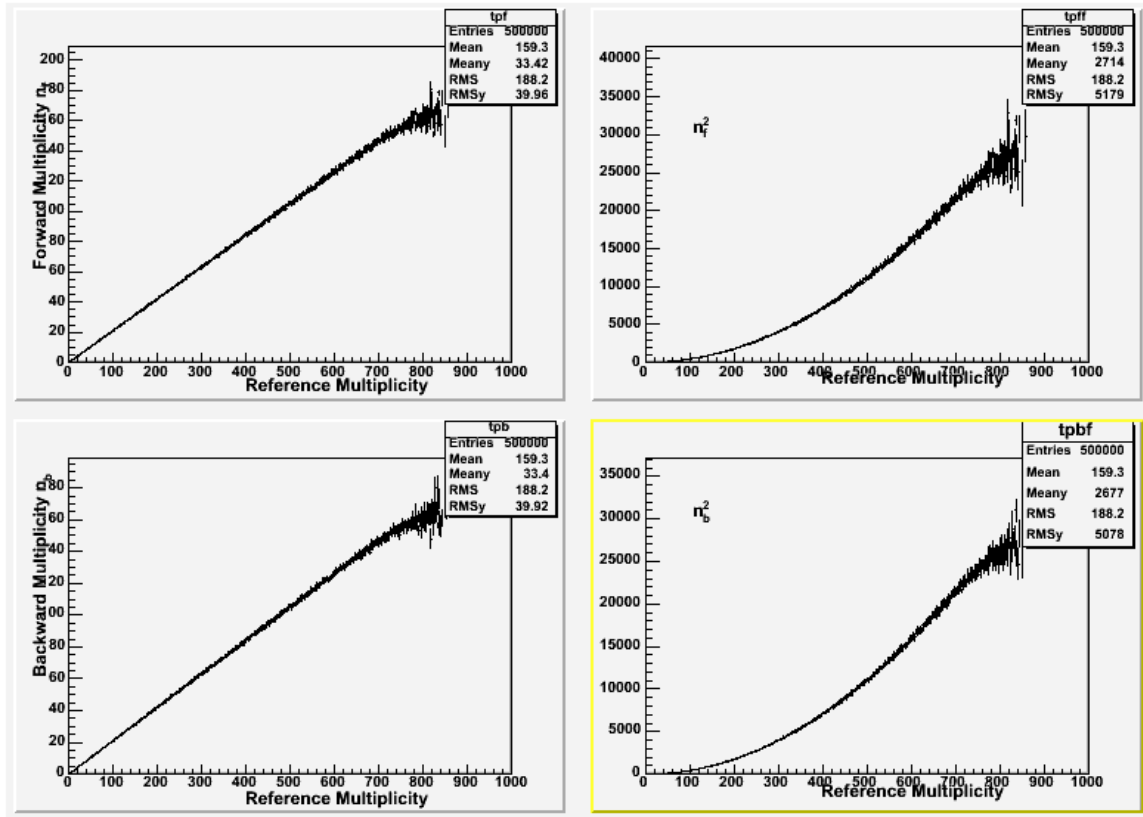


Fig.2

Backward-Forward Multiplicity Dispersion vs Reference Multiplicity

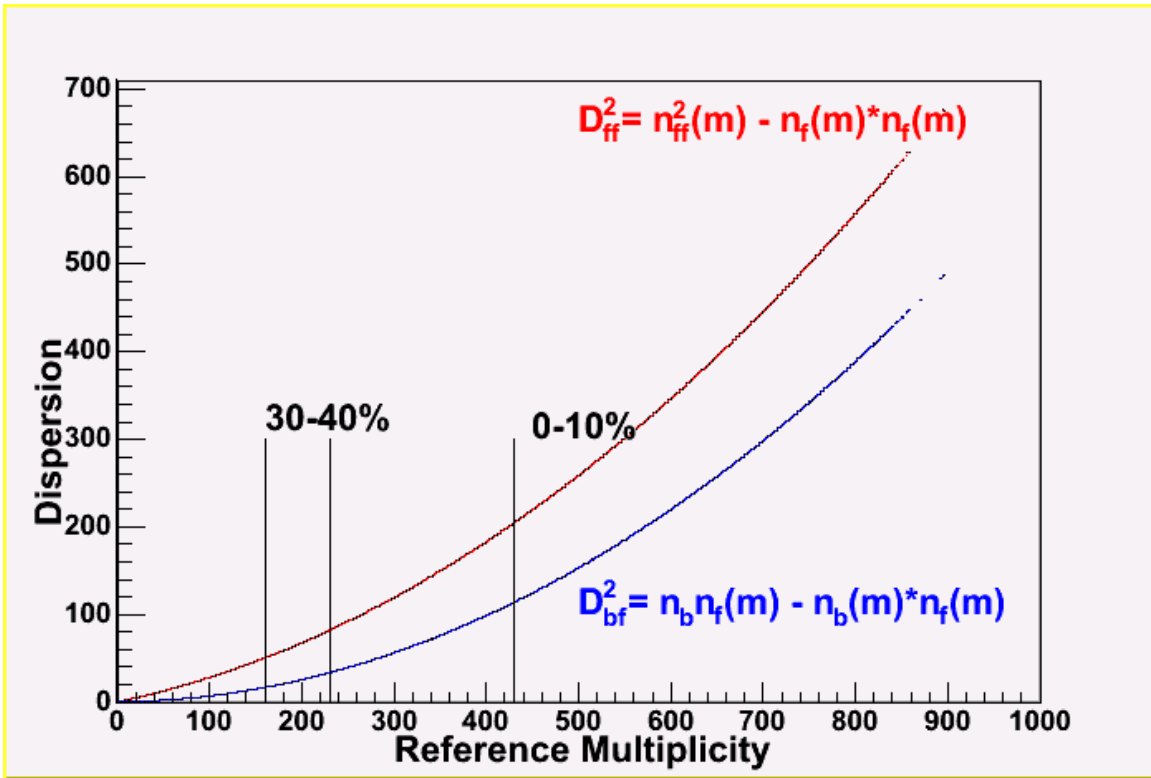


Fig.3 Backward-Forward Dispersion

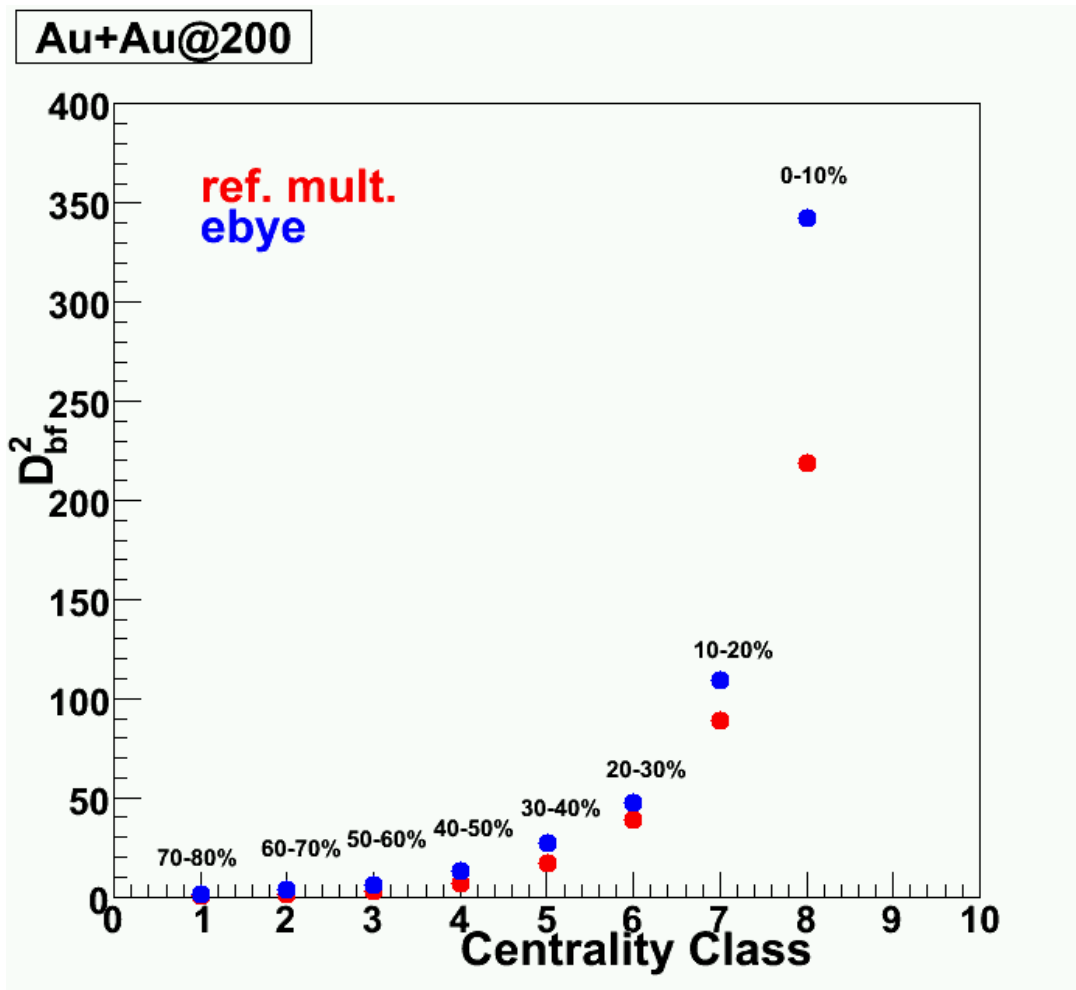


Fig. 4 Forward-Forward Dispersion

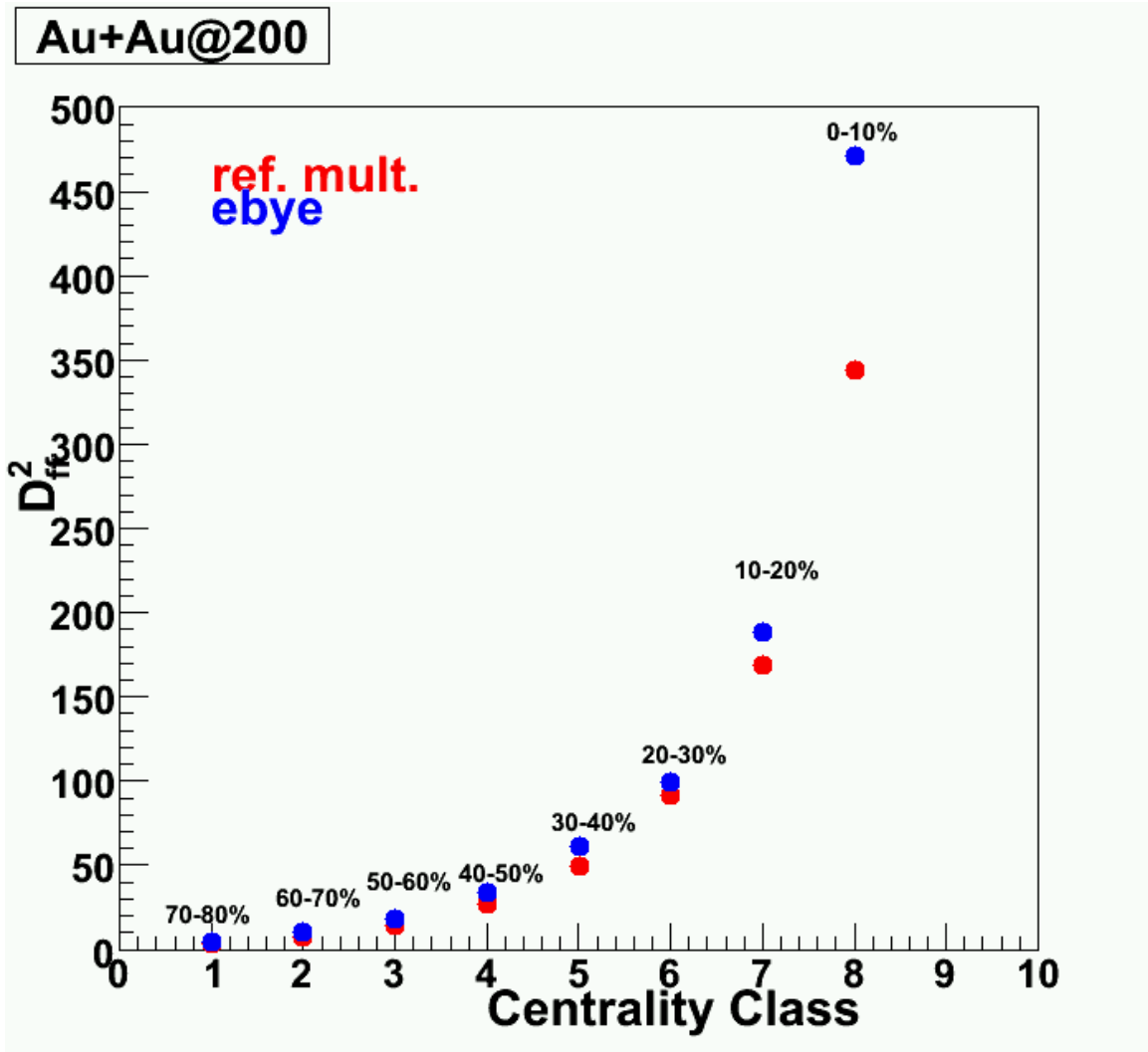


Fig.5 Probability Distribution of Forward multiplicity using reference multiplicity /event by event

$nf = -0.0404 + 0.210 * nref;$  // forward multiplicity as a function of ref. multiplicity

