Hit charge and RMS

Hugo Pereira and Catherine Silvestre
Saclay

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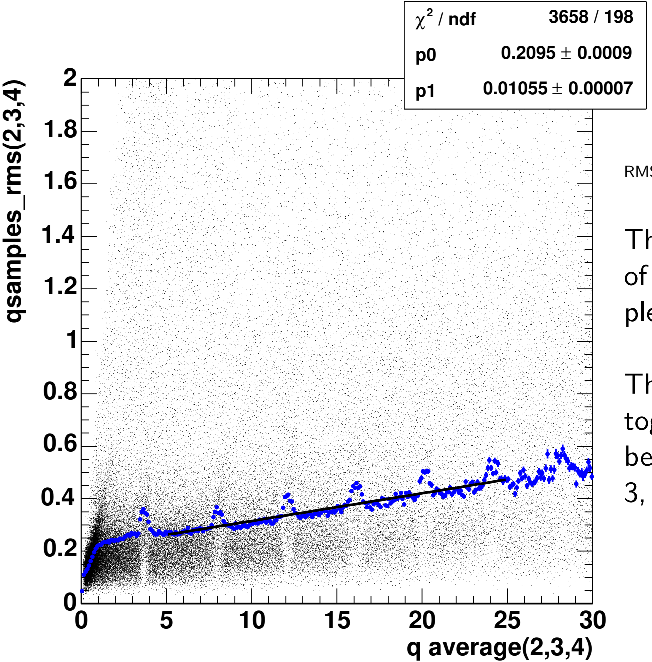
Outline

RMS sample vs charge Real Data

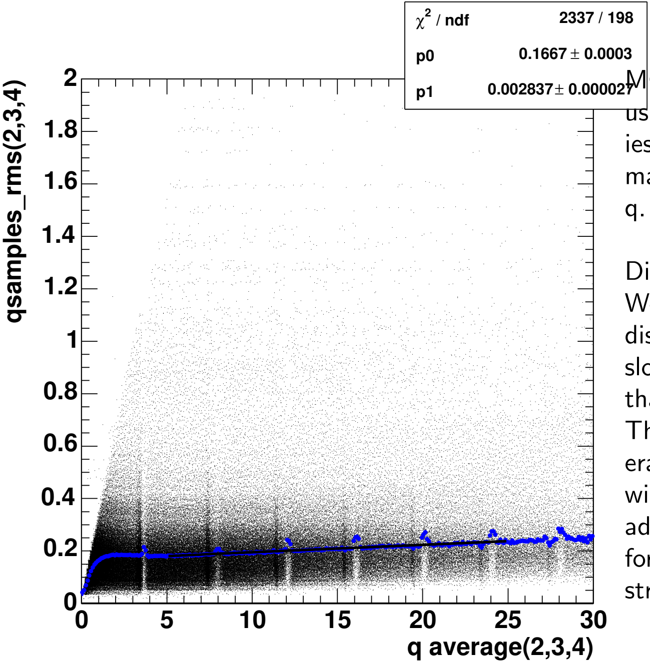


RMS$=\sqrt{(rms/gain)^2 + qsamples_rms^2}$

There is a big dispertion of the RMS of the sample for Real Data.

The profile of the 2D histogram in bins of x can be fitted linearly for $q > 3$, with a slope of 0.012.

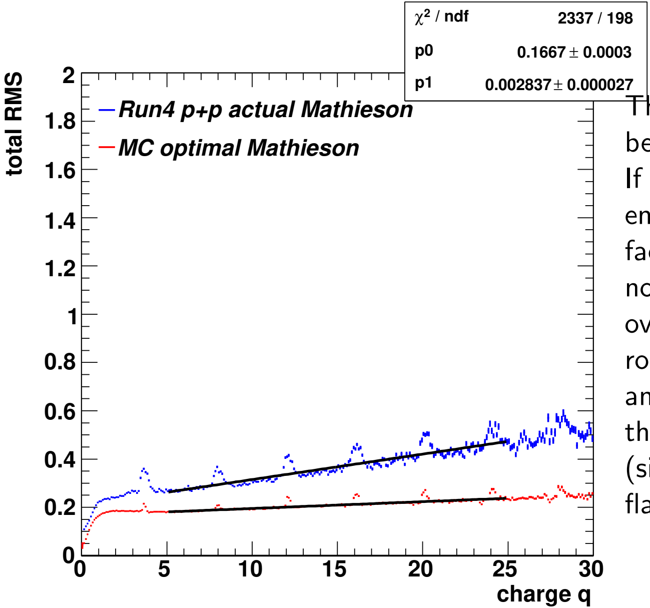
RMS sample vs charge MC new mathieson



MC jpsi were reconstructed using the optimal Mathieson parameters for a match of the cluster size vs q.

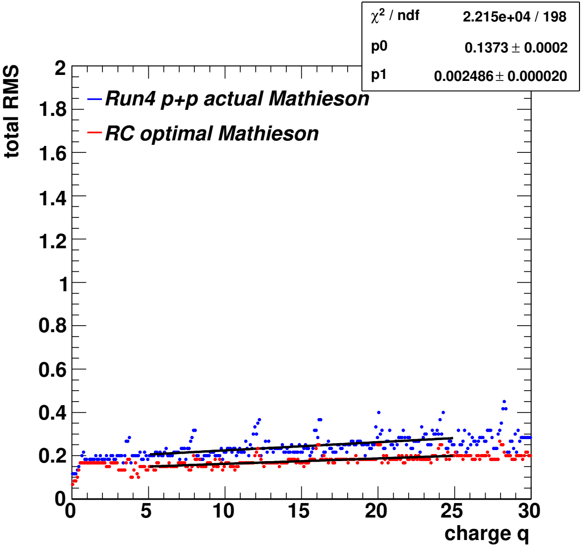
Dispertion of the RMS.
We fit the TPofile of the 2D distribution linearly. The slope is 10 times smaller than for RD: 0.003.
The RMS are smaller on average than for RD but this will be compensate by the aditional noise introduced for MC during the reconstruction.

RMS sample vs charge [RD vs MC]



The slope are different between RD and MC. If all the MC RMS are encreased but the same factor (as it is the case now), there might be a overestimation of the error for small charges and an underestimation of the error for big charges (since this slope is almost flat).

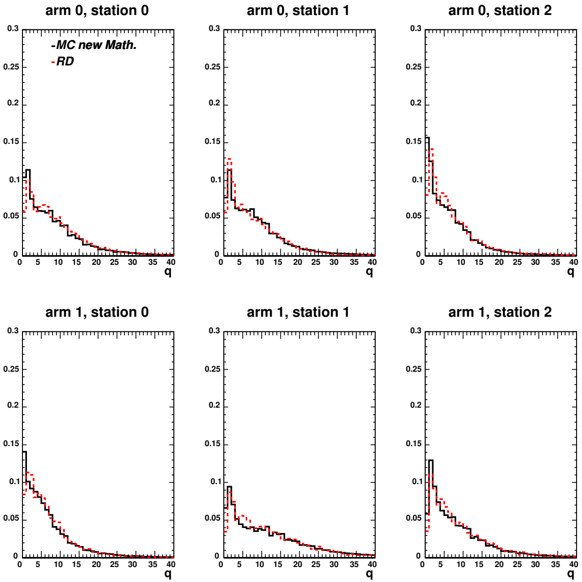
RMS sample vs charge: fitting the maximum



Here, we fit the maximum of the 2D distribution in each bin in x, and give the dispersion as error.

The slopes agree a lot better being of 0.0038 for RD and 0,0025 for MC.

Charge distribution



MC: using new Mathieson parameters.
RD: Run4 p+p with usual Mathieson parameters.

Discussion

rajouter les distrib de charges
et profile max
ce qu'on represente pas bien c la dispertion: faut rajouter un erreur qui fluctue d'une erreur l'autre (pas independante) et qui peut etre grande (autant que la dispertion). ce que a veux dire l c que a fluctue bcp naturellement (cause du bruit)