

Analysis of pipijpsi Events with CGEM

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Efficiency of Pion reconstruction

Channel: $\psi' \longrightarrow J/\psi + \pi^\pm$

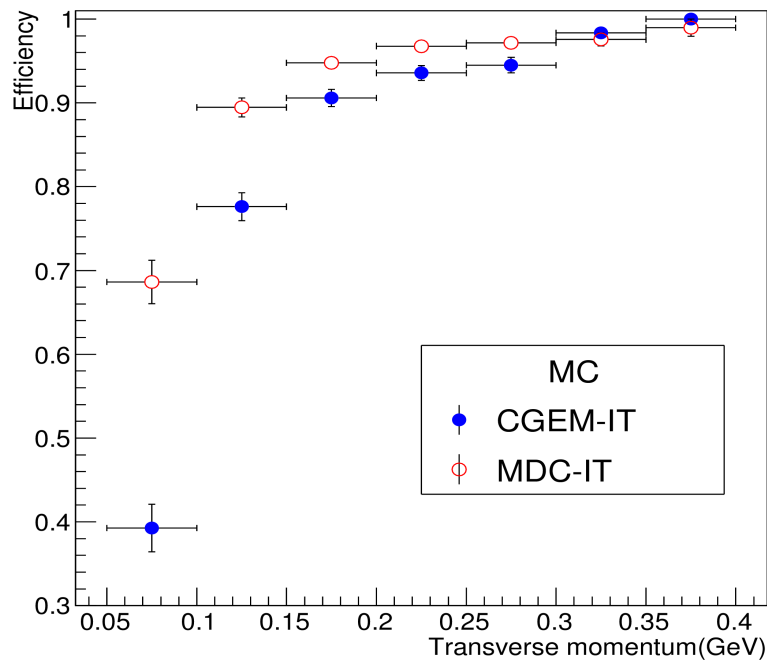
\downarrow
 $e^+ + e^-$

$$efficiency = \frac{N_4}{N_{3,4,5}}$$

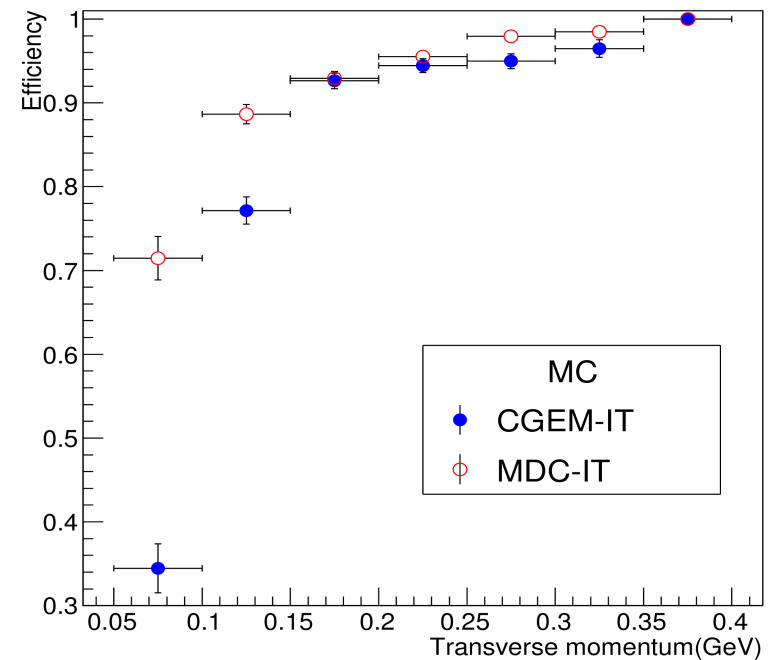
N_4 :number of events that total 4 tracks are reconstructed correctly

$N_{3,4,5}$:number of events that other 3 tracks are reconstructed correctly

π^+ efficiency vs pt,e

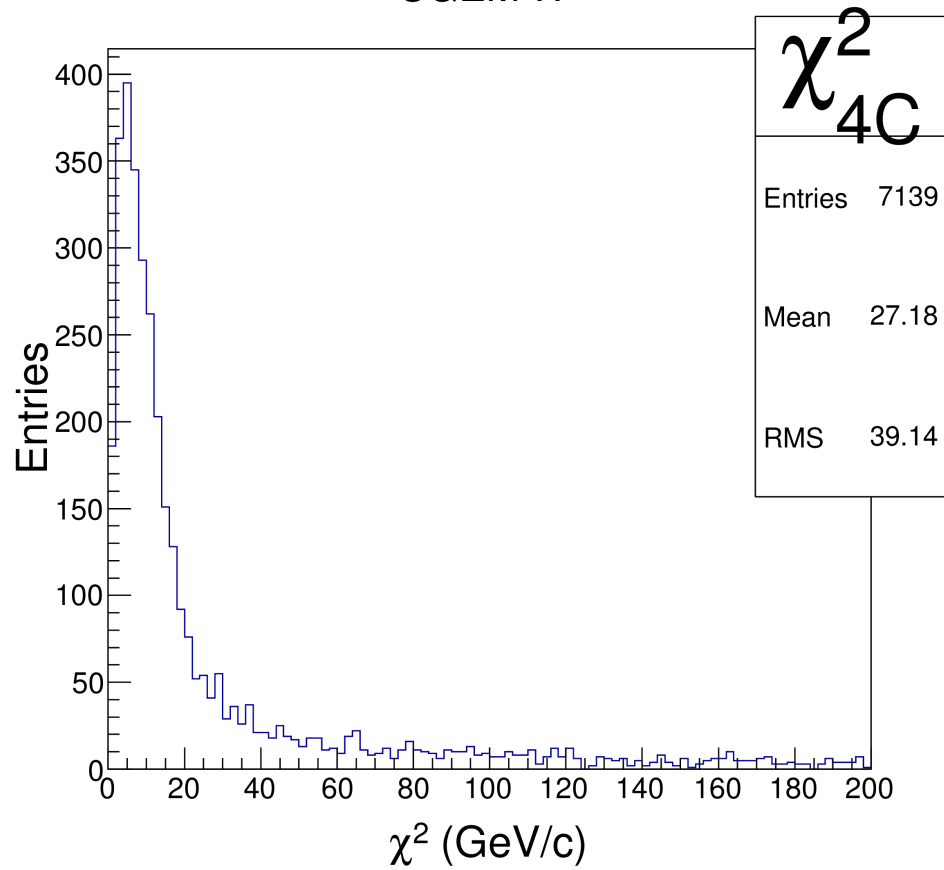


π^- efficiency vs pt,e

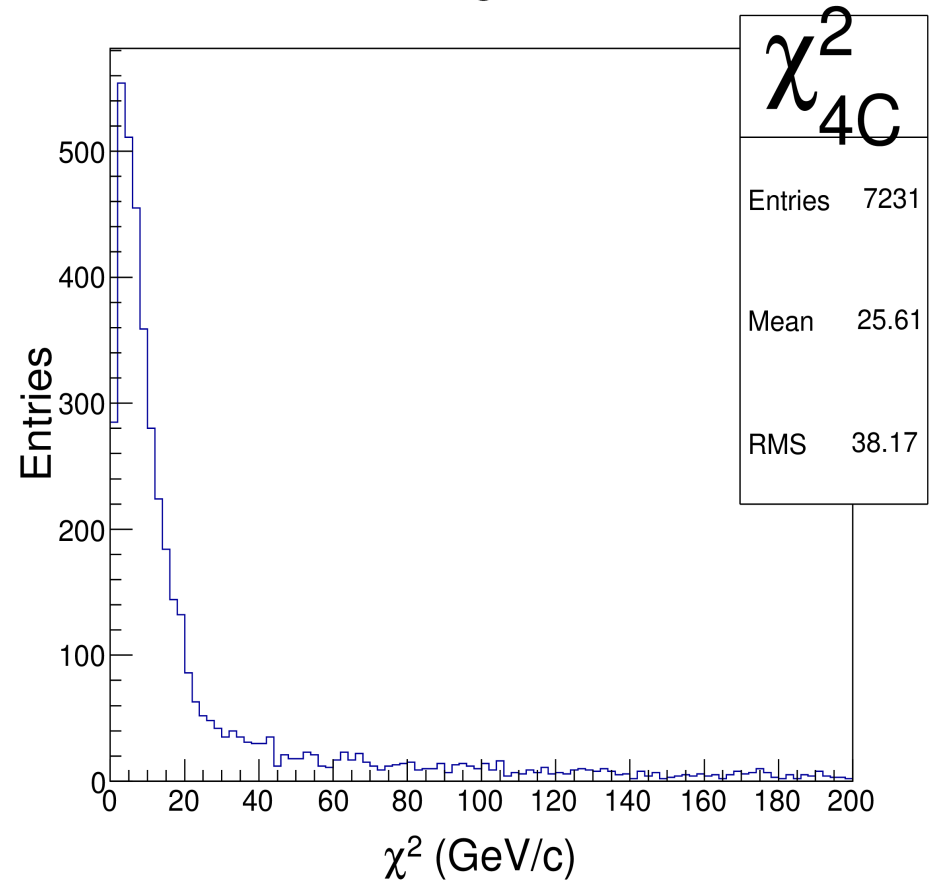


χ^2 of 4C fitting

CGEM-IT

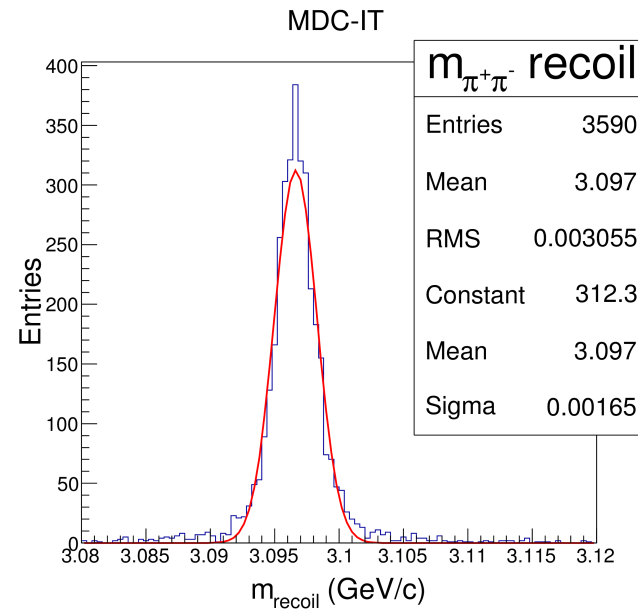
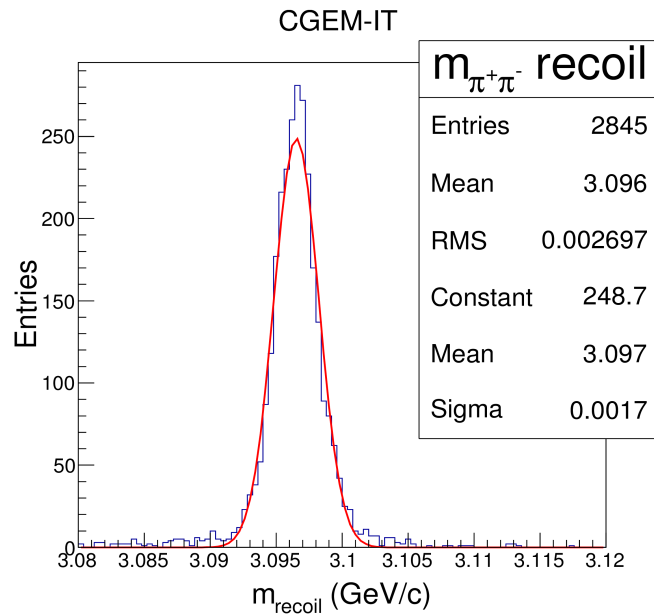
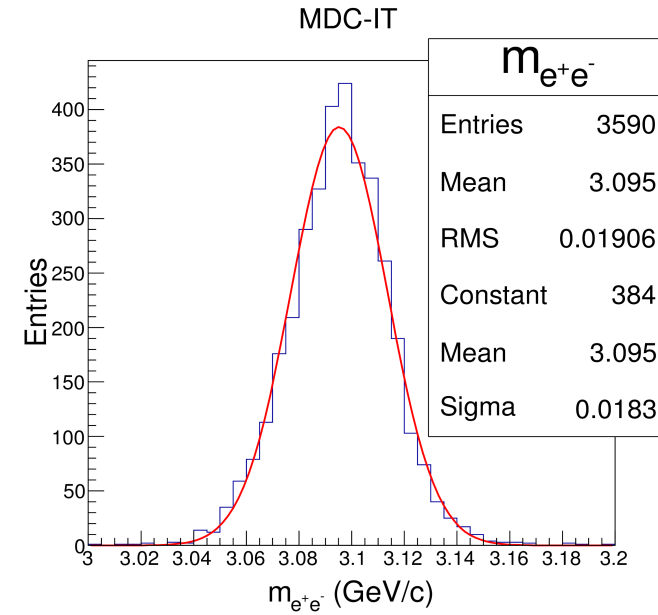
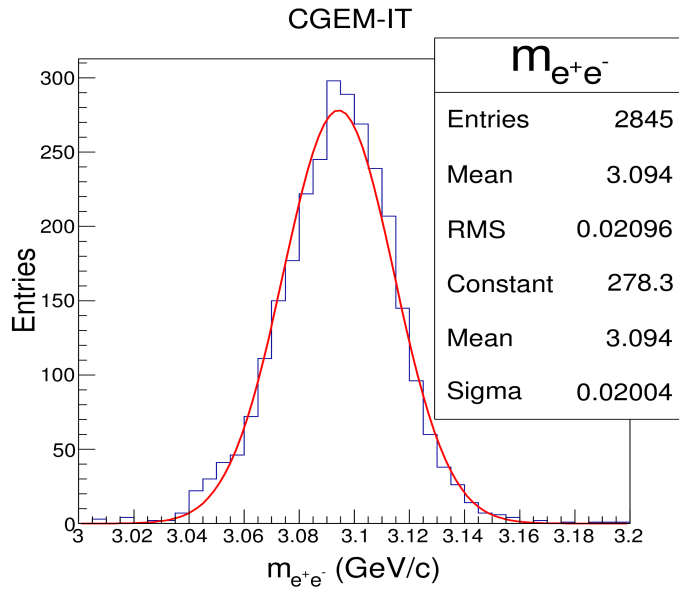


MDC-IT

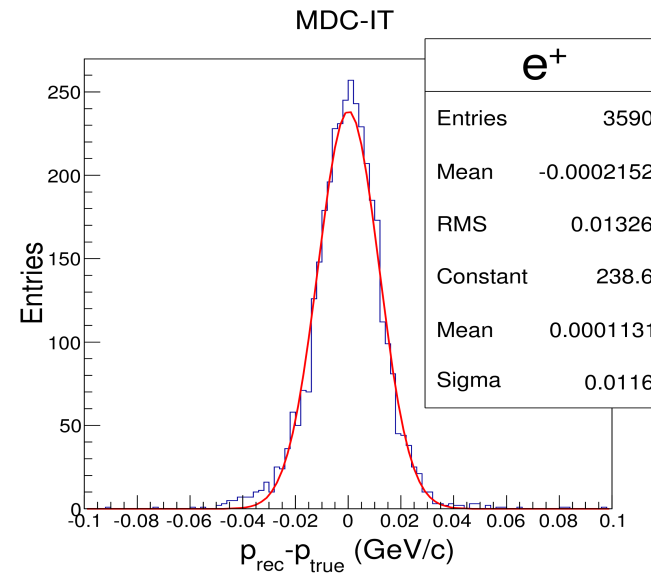
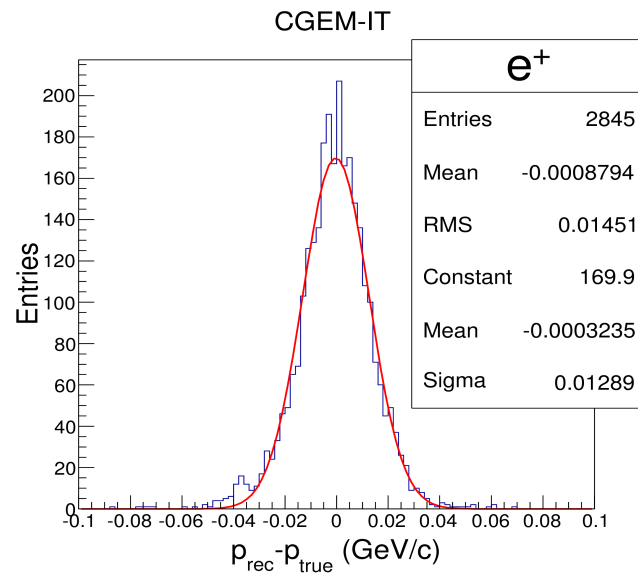
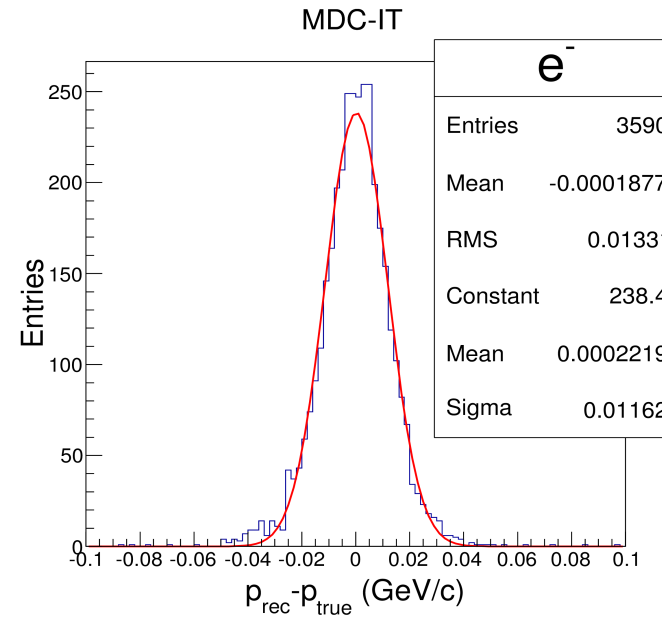
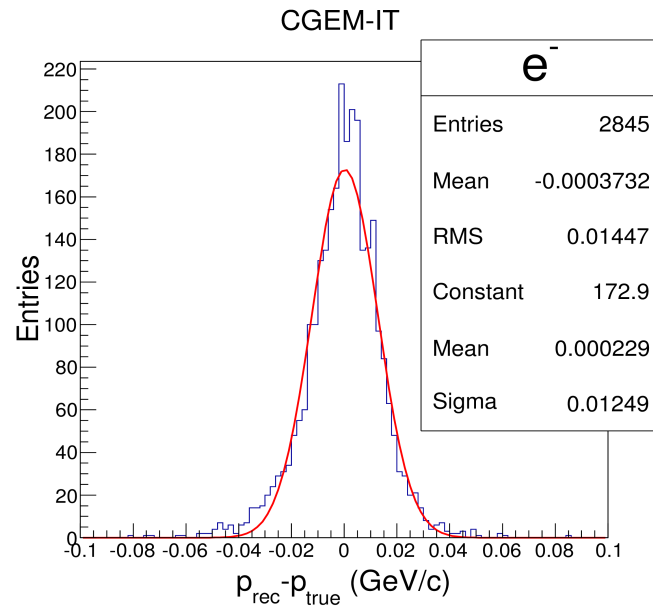


Mass Resolution

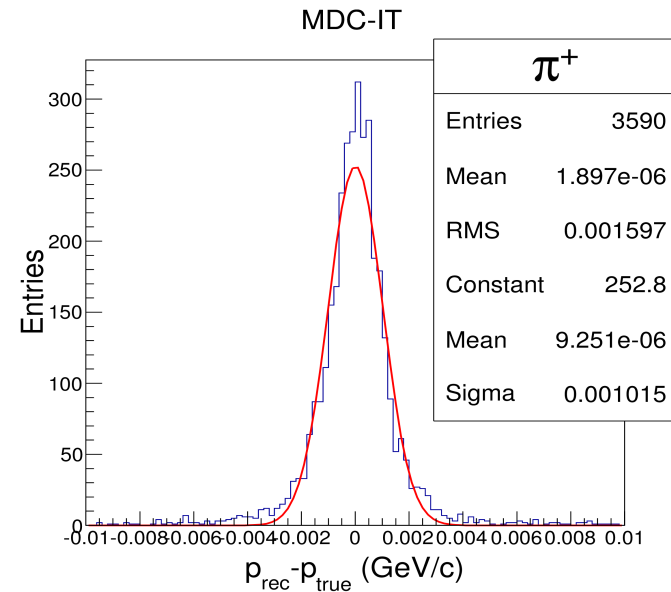
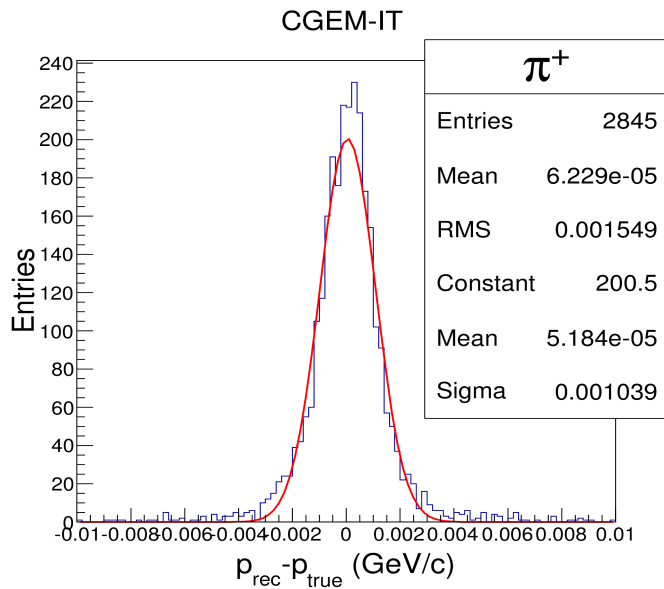
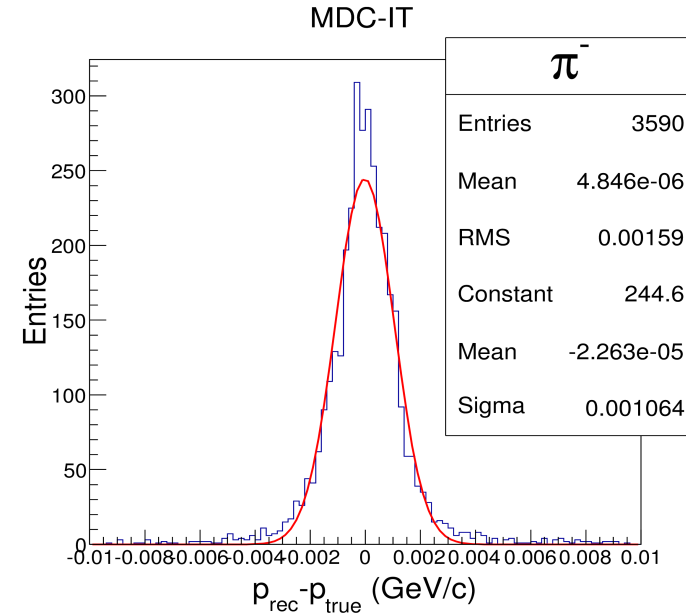
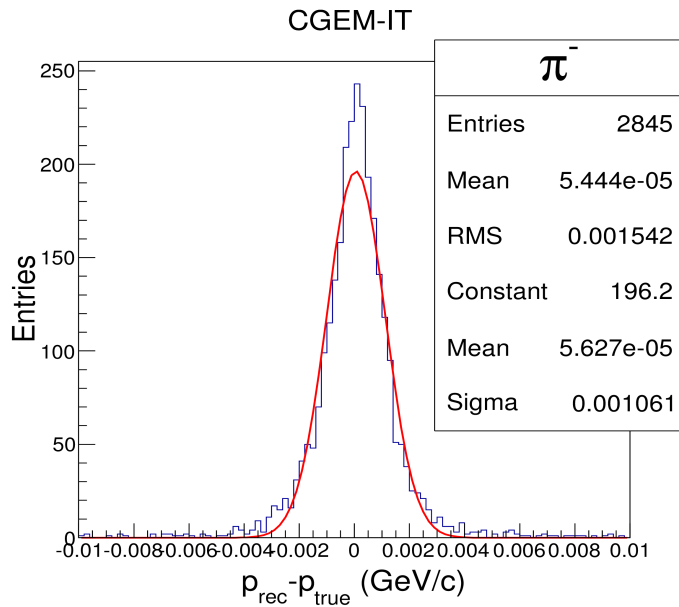
$$(\chi^2_{4C} < 40)$$



Momentum Resolution ($\chi^2_{4C} < 40$)



Momentum Resolution ($\chi^2_{4C} < 40$)



summary

- Reconstruction efficiency of CGEM-IT and MDC-IT is close at high momentum, but at low momentum CGEM-IT is much more lower.
- Mass resolution (J/ψ) of CGEM-IT is a little worse than that of MDC-IT.
- Momentum resolution of CGEM-IT is also a little bit worse than that of MDC-IT.