

R value measurement at 3.85 – 4.59 GeV at BESIII

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Abstract

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8	CONTENTS	
9	I. Detail comparisons between MC and data	3
10	II. The processing of the LUARLW parameter sets	12

11 I. DETAIL COMPARISONS BETWEEN MC AND DATA

12 The main change of the ConExc model:

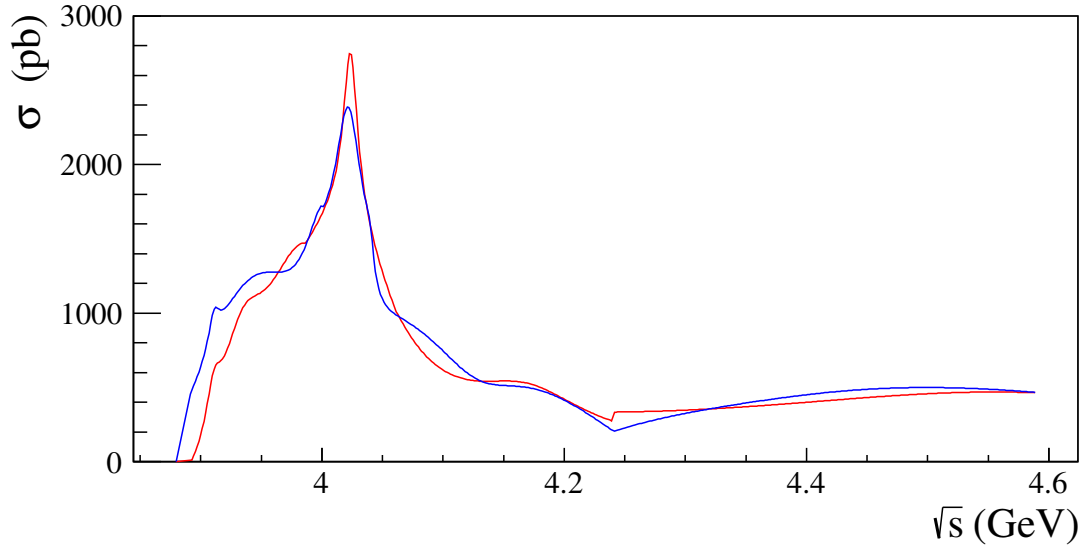


FIG. 1. The Born cross section line-shape of process $e^+e^- \rightarrow D^{*+}D^-$, in which the charge-conjugate mode is included.

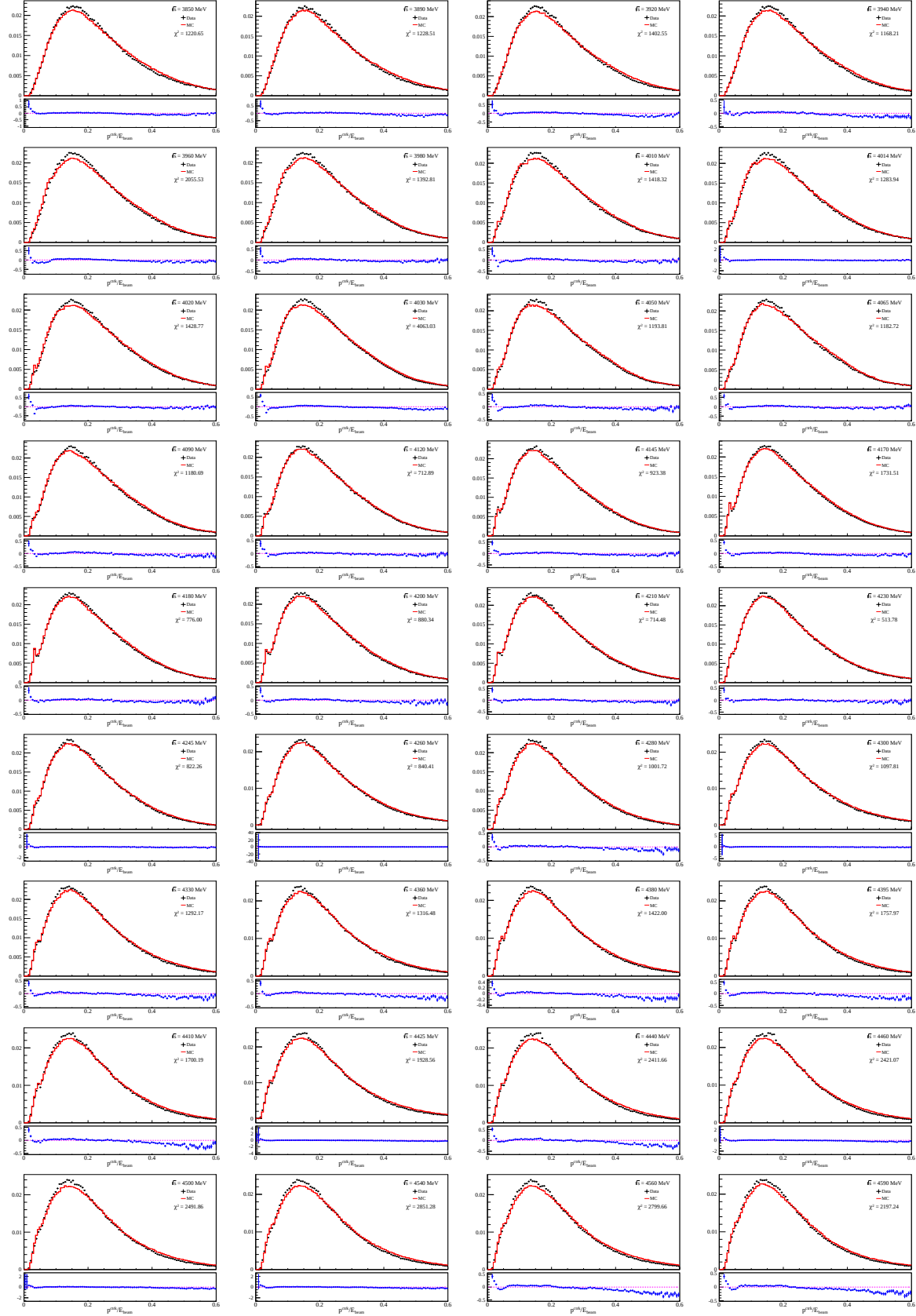


FIG. 2. The detail comparisons of p_{trk} between signal MC and data

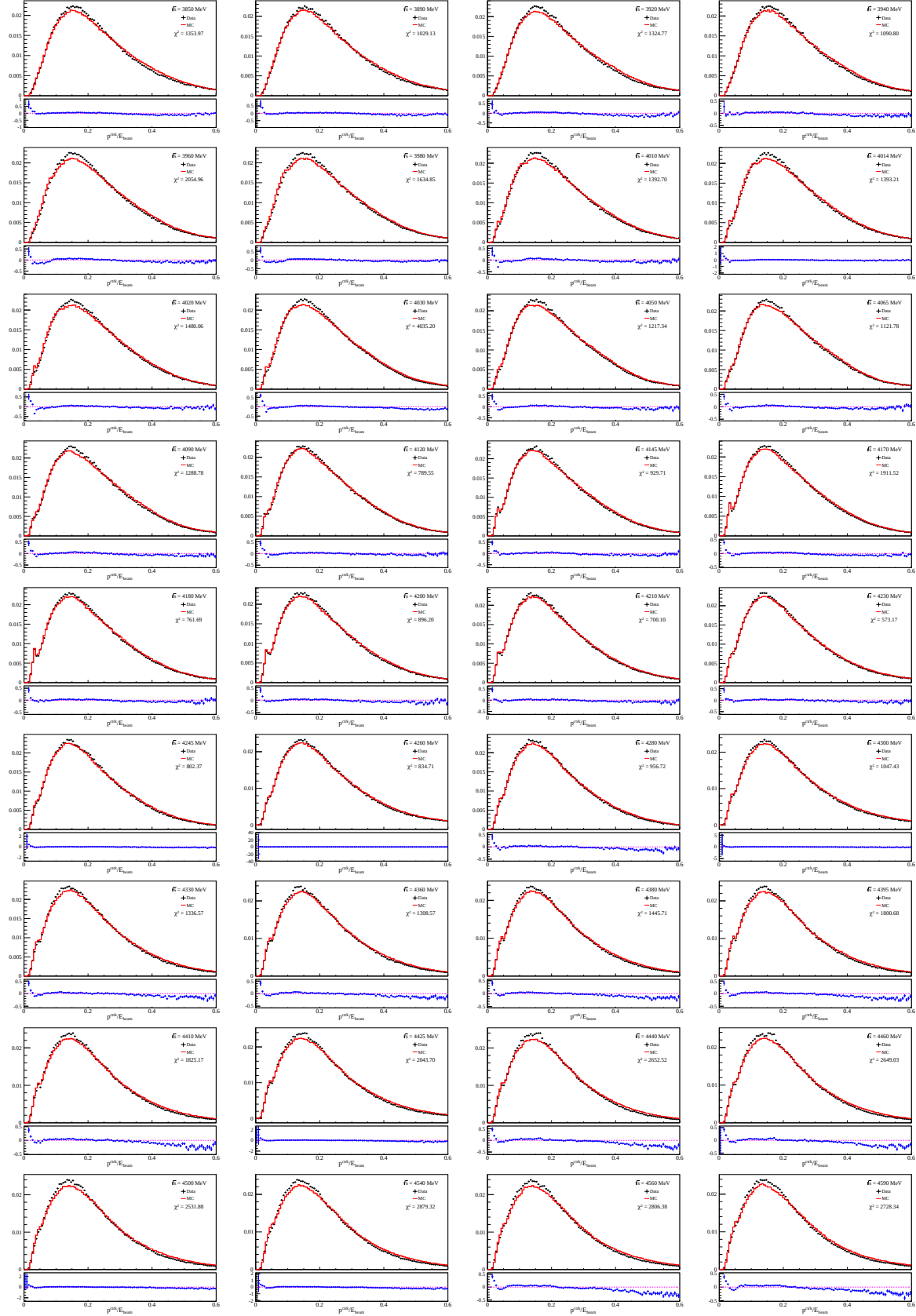


FIG. 3. The detail comparisons of p_{trk} between signal MC and data

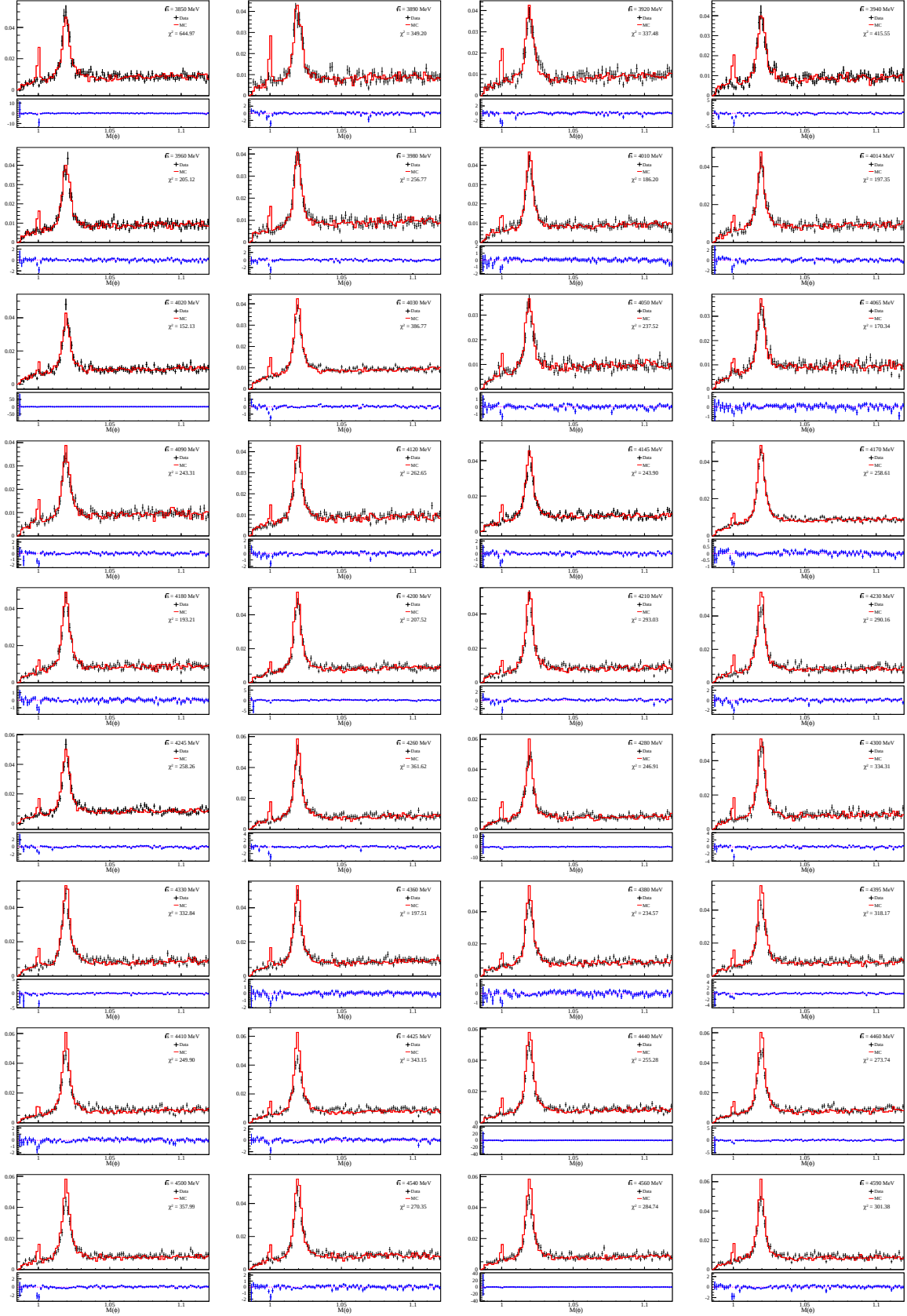


FIG. 4. The detail comparisons of $M(\phi)$ between signal MC and data

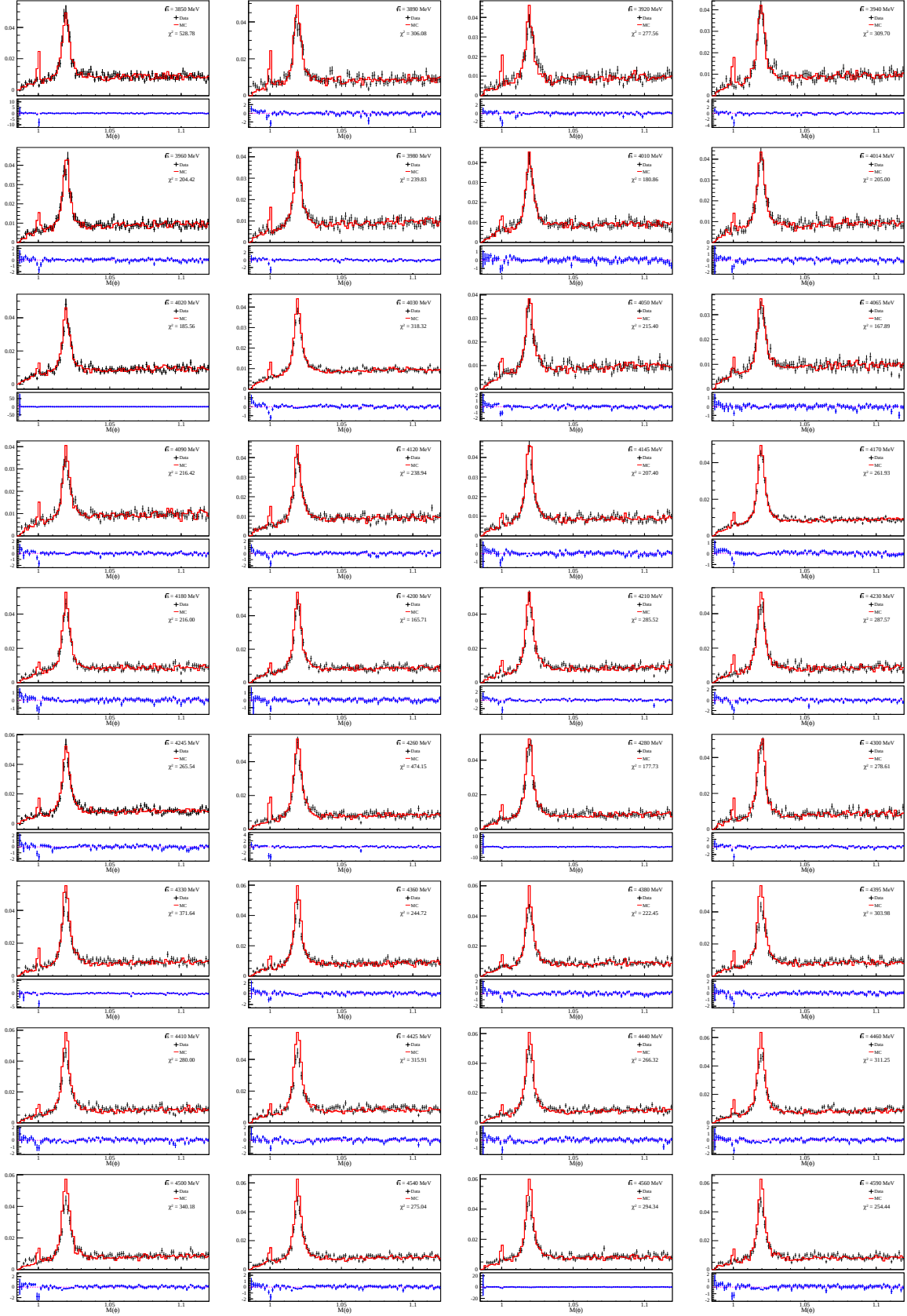


FIG. 5. The detail comparisons of $M(\phi)$ between signal MC and data

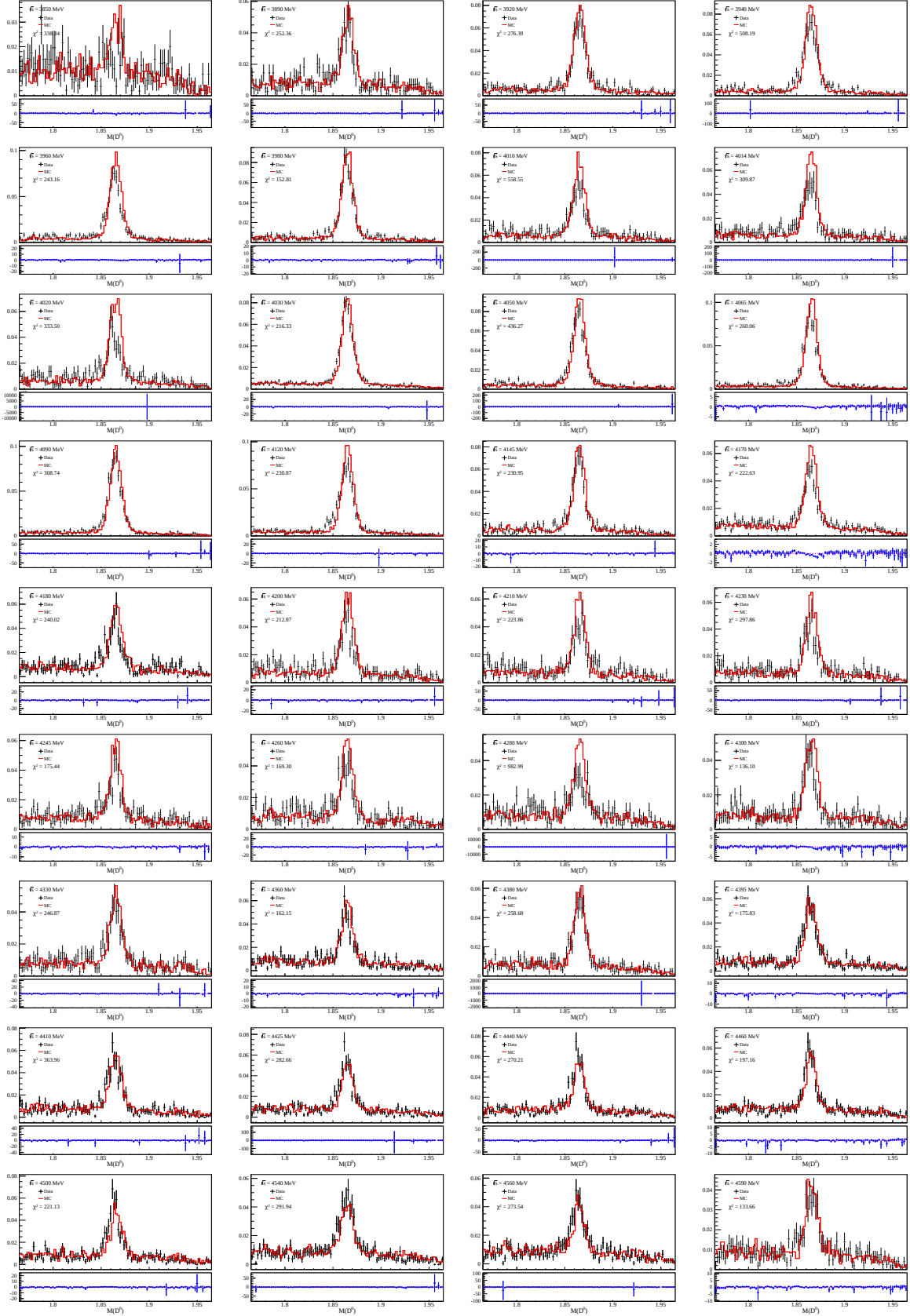


FIG. 6. The detail comparisons of $M(D^0)$ between signal MC and data

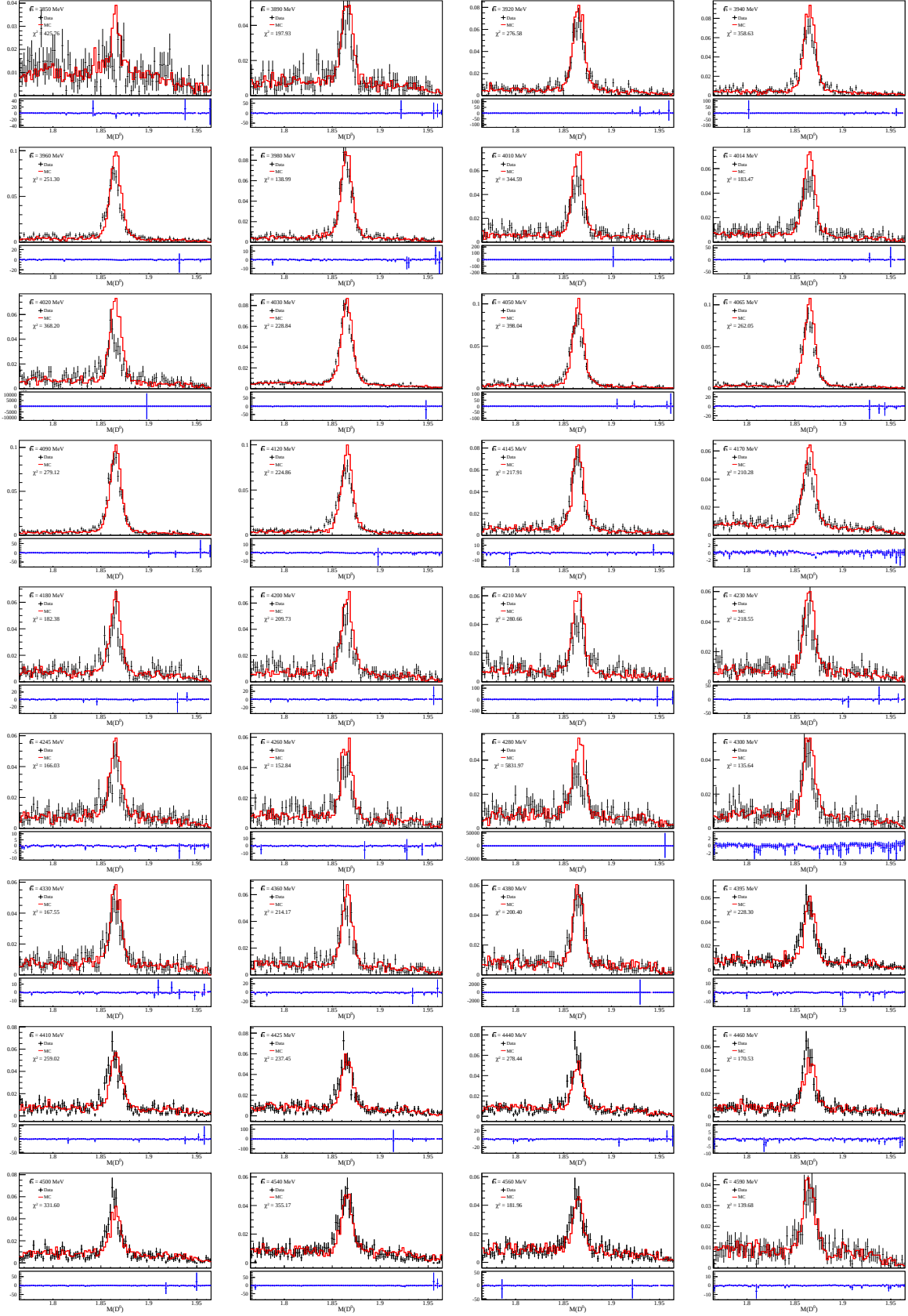


FIG. 7. The detail comparisons of $M(D^0)$ between signal MC and data

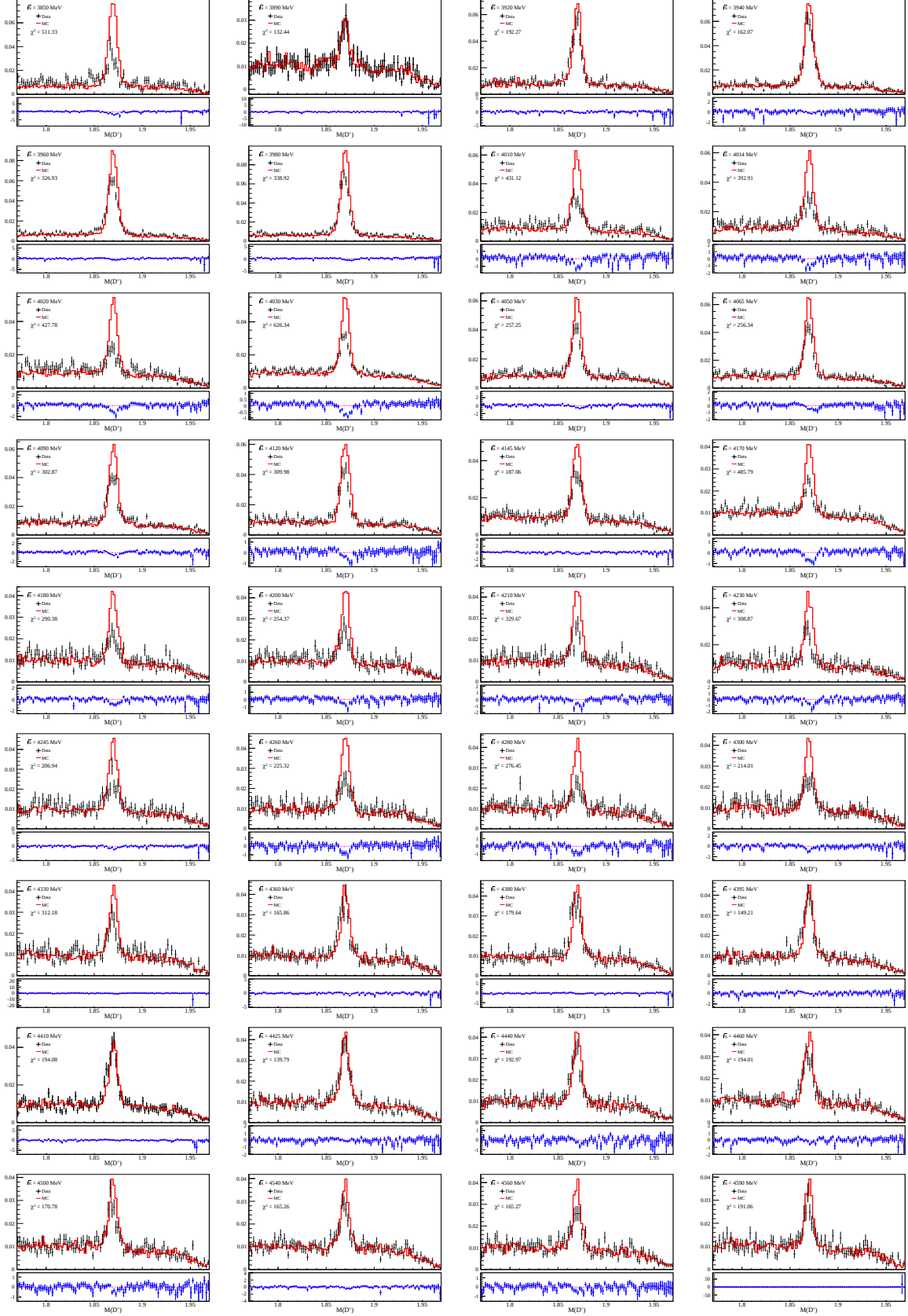


FIG. 8. The detail comparisons of $M(D^\pm)$ between signal MC and data

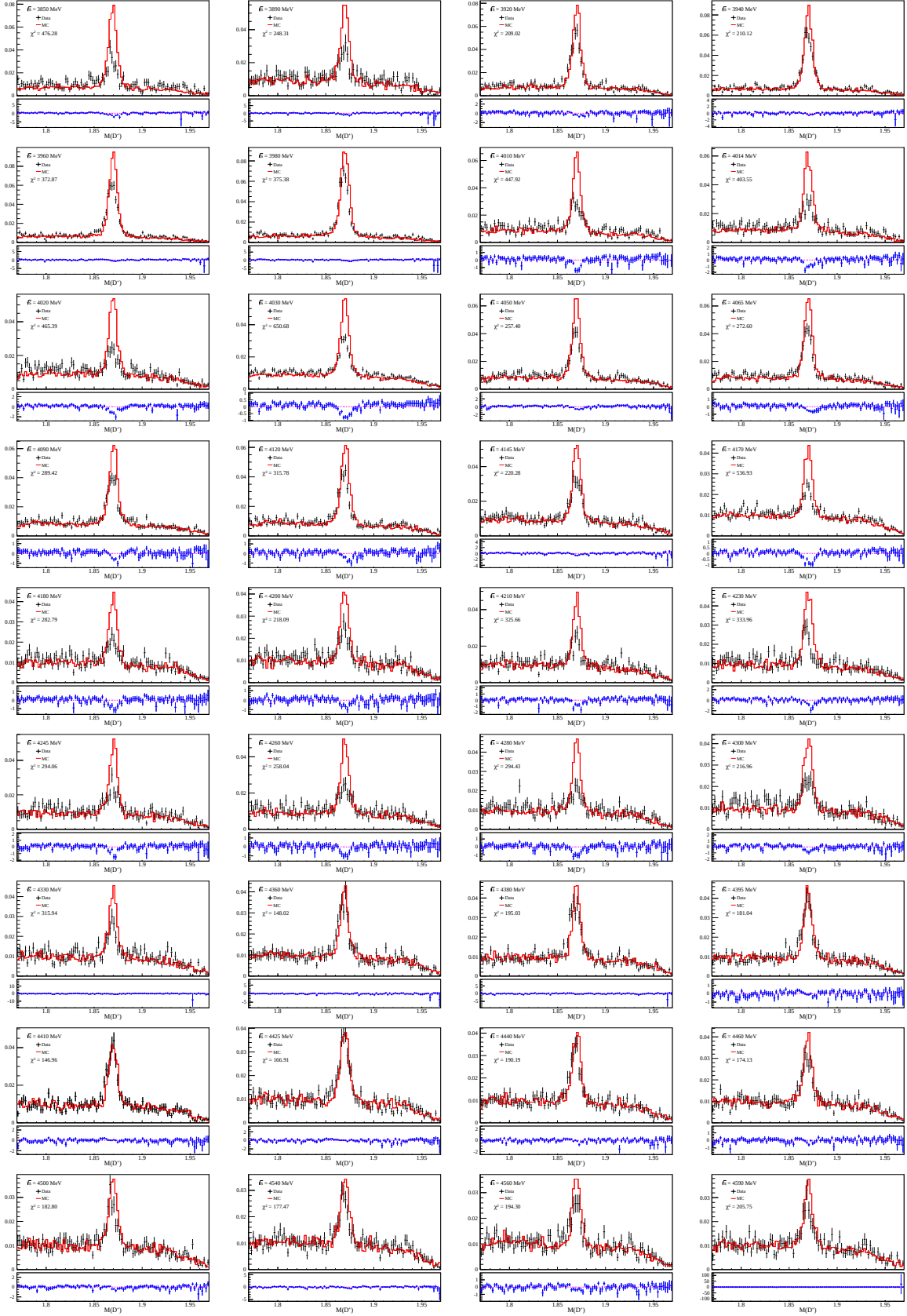


FIG. 9. The detail comparisons of $M(D^\pm)$ between signal MC and data

II. THE PROCESSING OF THE LUARLW PARAMETER SETS

From the first tuning round, we obtained the resulted LUARLW parameter sets. After sorting these parameter sets with respect to the χ^2 of ngood, we extracted the top 200 LUARLW parameter sets, as shown in Fig. 10.

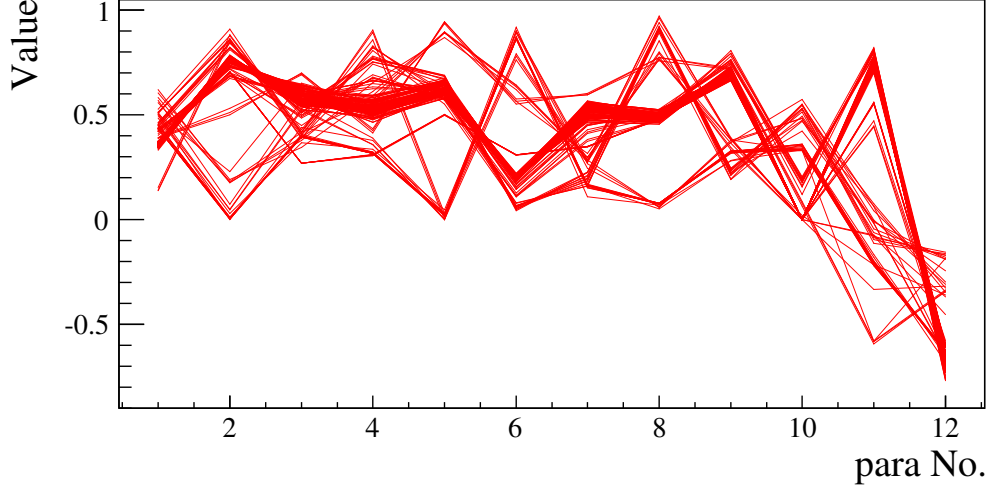


FIG. 10. The top 200 LUARLW parameter sets.

The difference between any two LUARLW parameter sets, $\mathbf{p}_i$ and $\mathbf{p}_j$, can be defined by the quantity χ_{ij}^2 :

$$\chi_{ij}^2 = \sum_{m=1}^{12} (\mathbf{p}_i^m - \mathbf{p}_j^m)^2. \quad (1)$$

The distribution of all the 19900 χ_{ij}^2 is shown in Fig. 11.

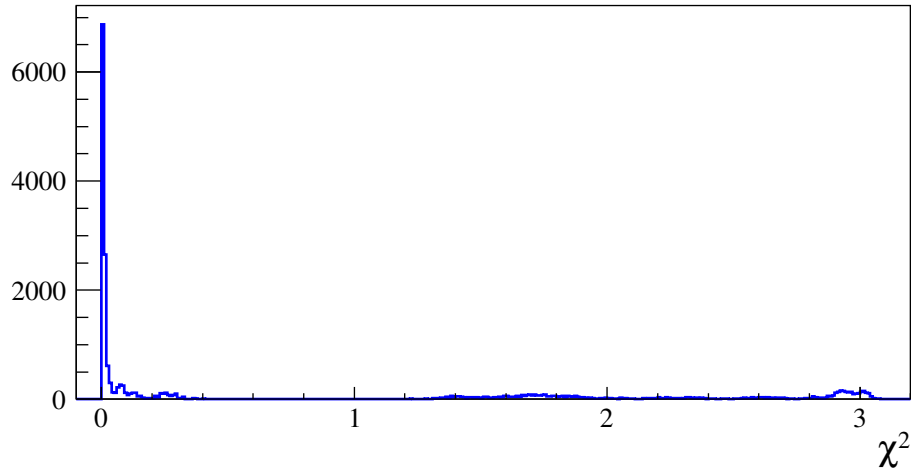


FIG. 11. The distribution of all the χ_{ij}^2 .

24 We classified these 200 parameter sets into 8 groups by requiring $\chi^2_{ij} < 0.2$. The resulted groups
 25 are shown in Fig. 12, in which different color represent different LUARLW parameter set groups.

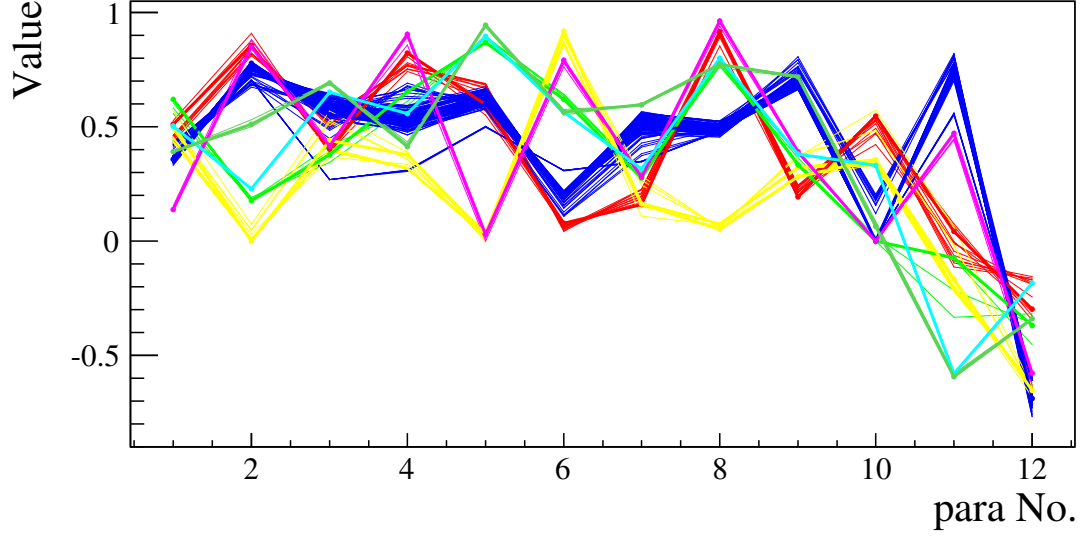


FIG. 12. The 8 groups of the 200 LUARLW parameter sets.

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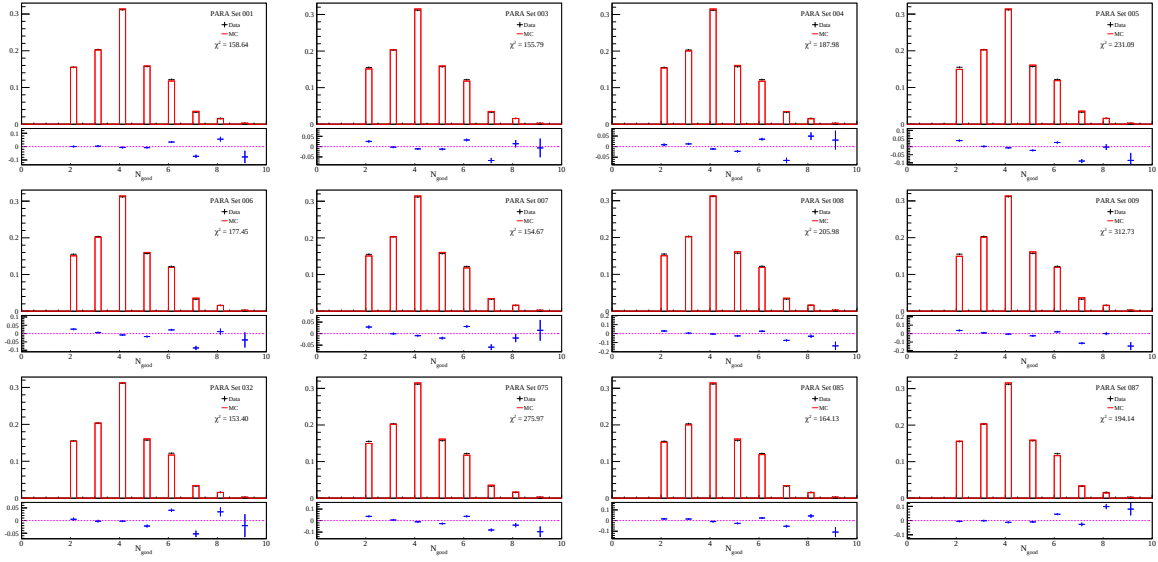


FIG. 13. The distribution of ngood of the first group of LUARLW parameter sets.

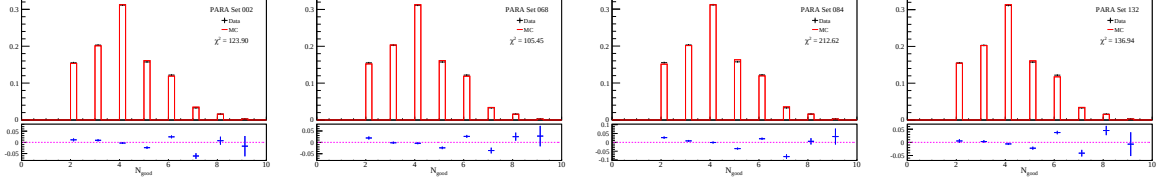


FIG. 14. The distribution of $ngood$ of the second group of LUARLW parameter sets.



FIG. 15. The distribution of $ngood$ of the third group of LUARLW parameter sets (partial).

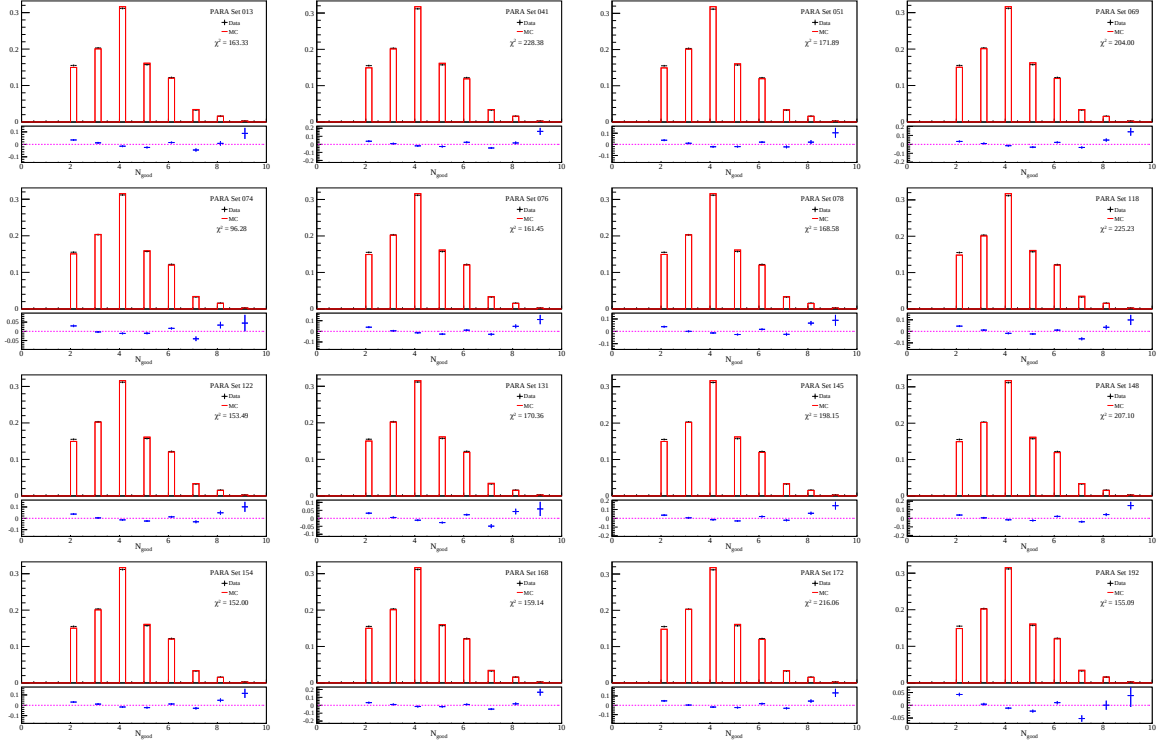


FIG. 16. The distribution of ngood of the forth group of LUARLW parameter sets.

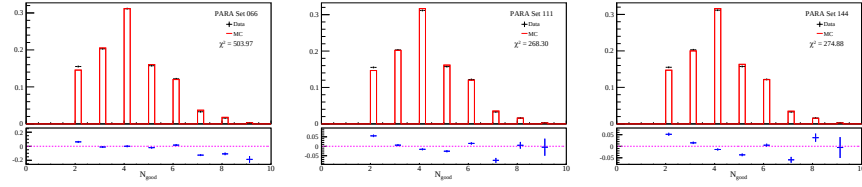


FIG. 17. The distribution of ngood of the fifth group of LUARLW parameter sets.

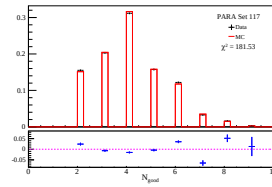


FIG. 18. The distribution of ngood of the sixth group of LUARLW parameter sets.

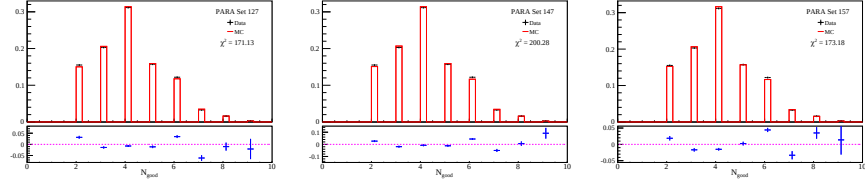


FIG. 19. The distribution of $ngood$ of the seventh group of LUARLW parameter sets.