

Superiteration for unfolding

(Following J/Psi Analysis)

Flowchart:

- Start with a flat prior in fragmentation function (Z)

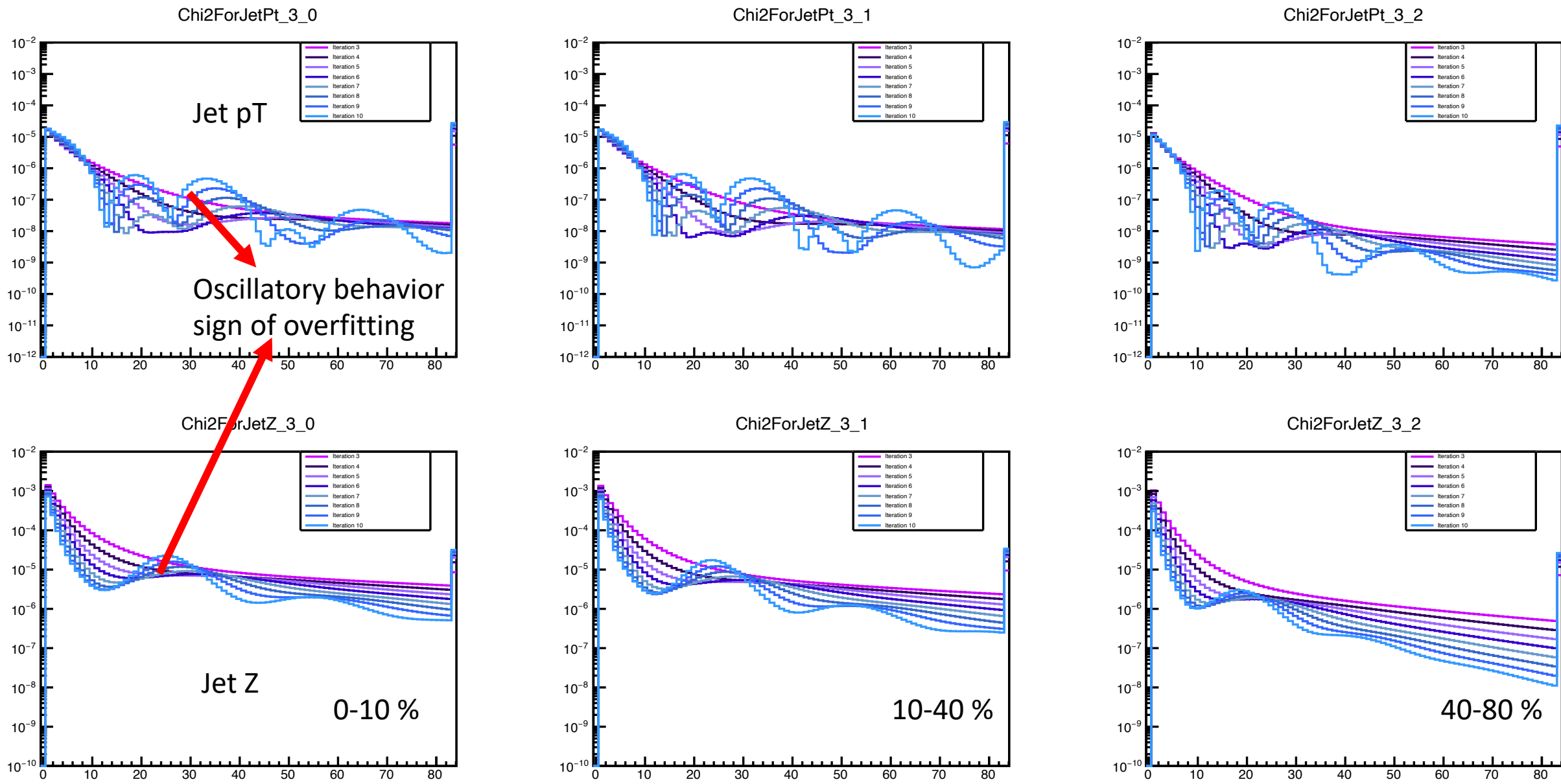
- Unfold the 2D jet p_T vs Z distribution with flat prior assumption

- Use the unfolded Z distribution as a prior in next step

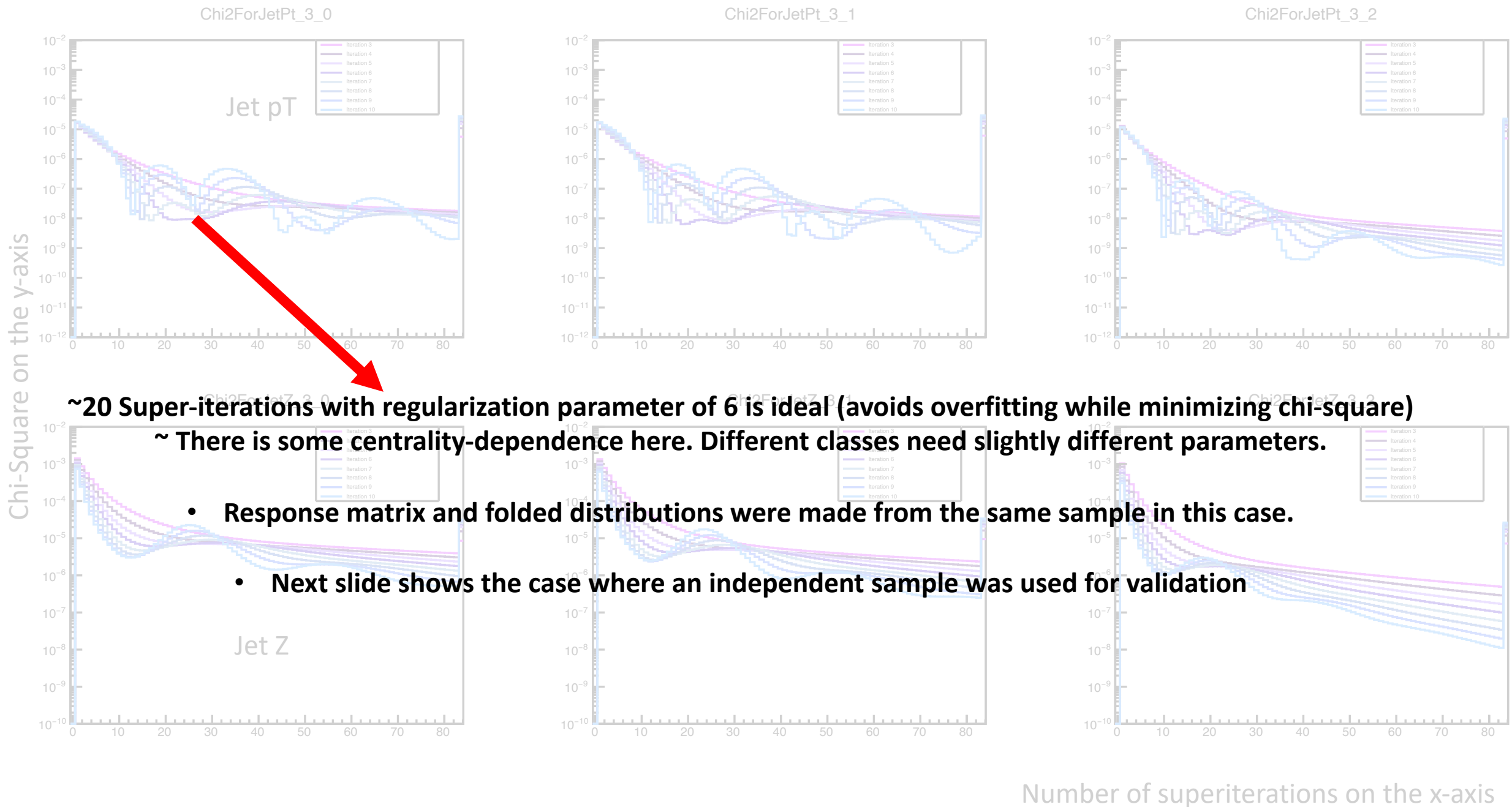
x repeat n times -----> Calling this “**SUPERITERATION**”

- Terminate at a reasonable chi-square value

Chi-Square on the y-axis

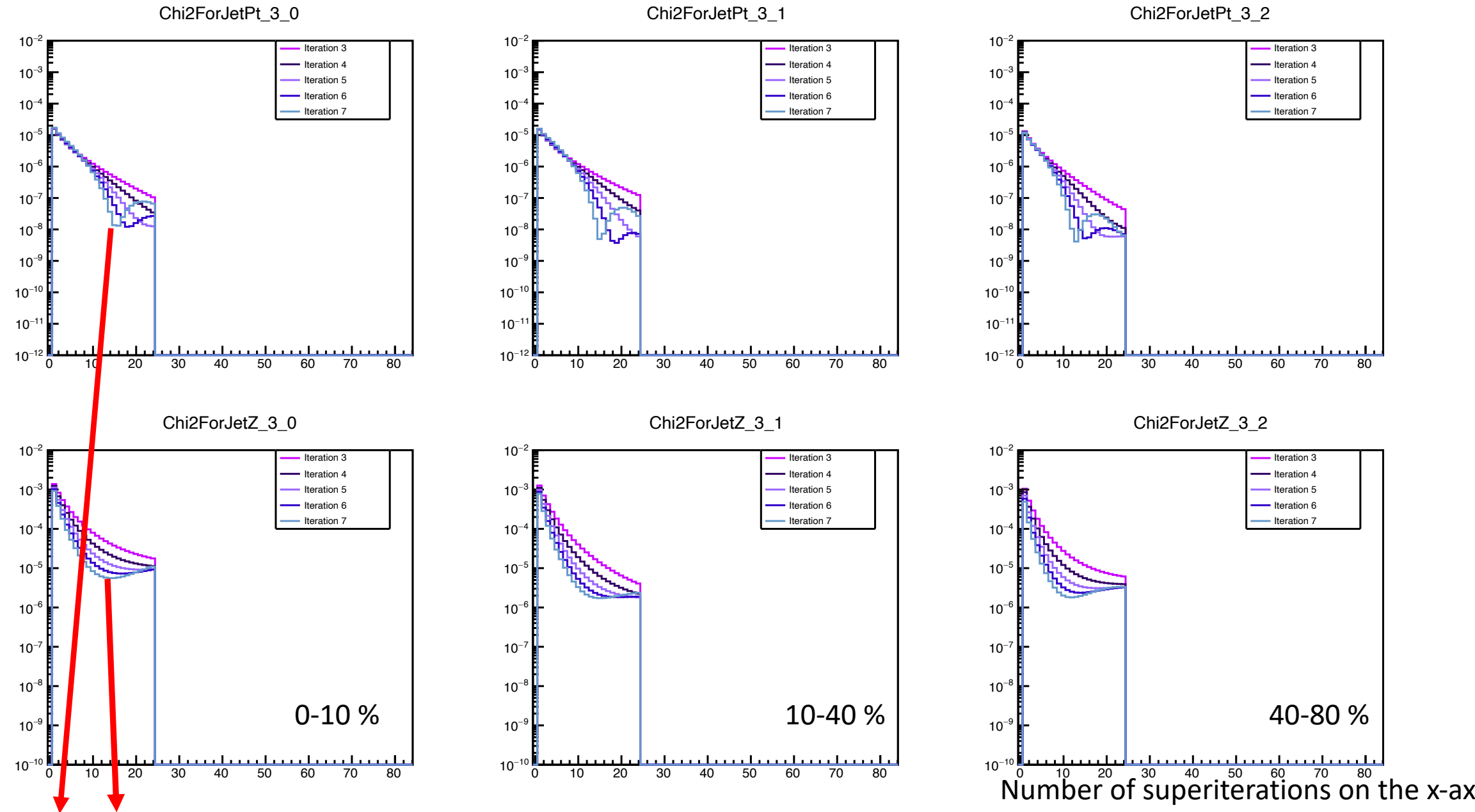


Chi-square as a function of number of superiterations for different regularization parameters



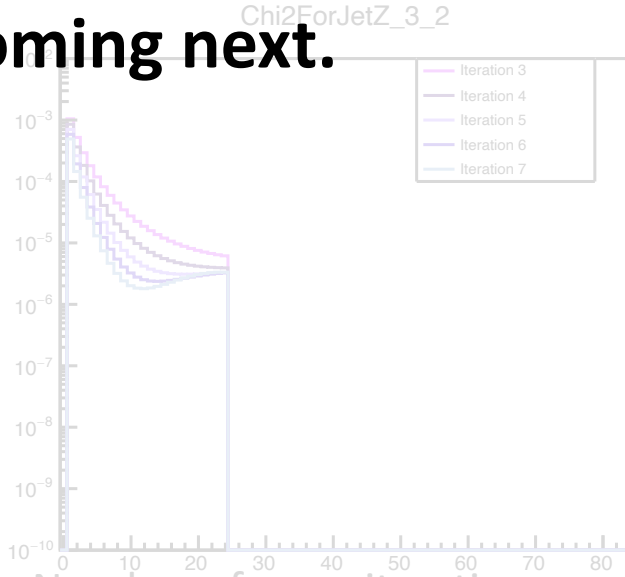
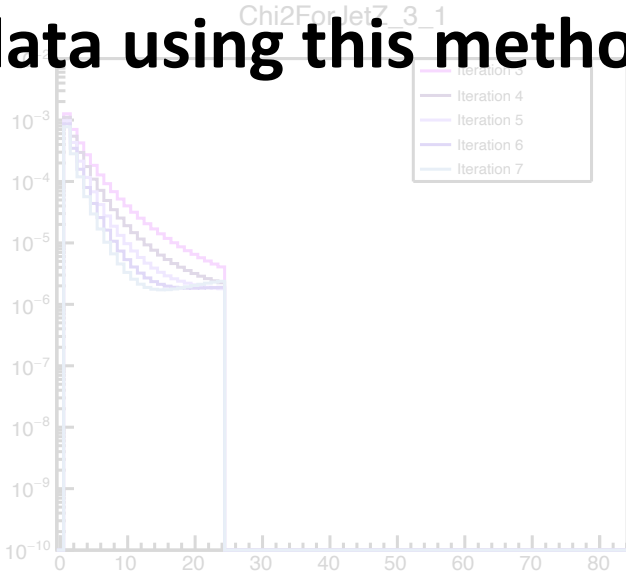
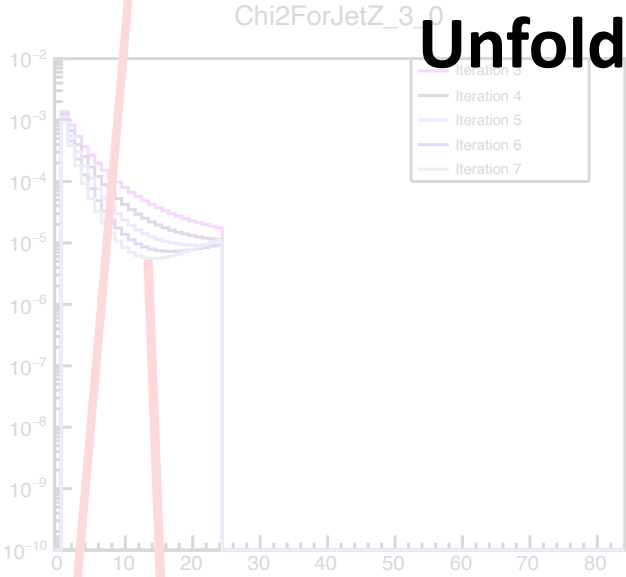
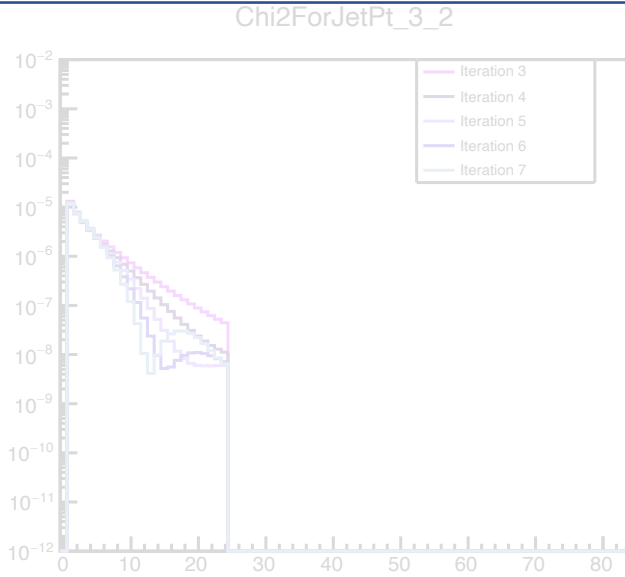
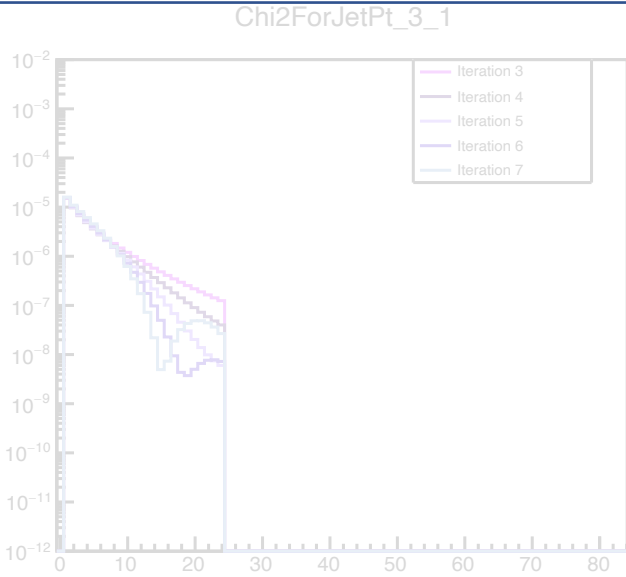
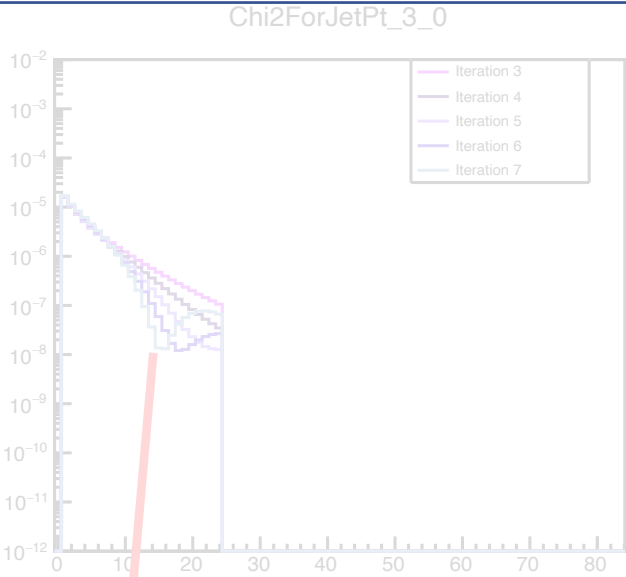
Test-Train Split *Chi-square as a function of number of superiterations for different regularization parameters*

Chi-Square on the y-axis



10-15 Super-iterations with regularization parameter of 6 is ideal (avoids overfitting while minimizing chi-square)

Chi-Square on the y-axis



Unfolded data using this method coming next.

Number of superiterations on the x-axis

10-15 Super-iterations with regularization parameter of 6 is ideal (avoids overfitting while minimizing chi-square)