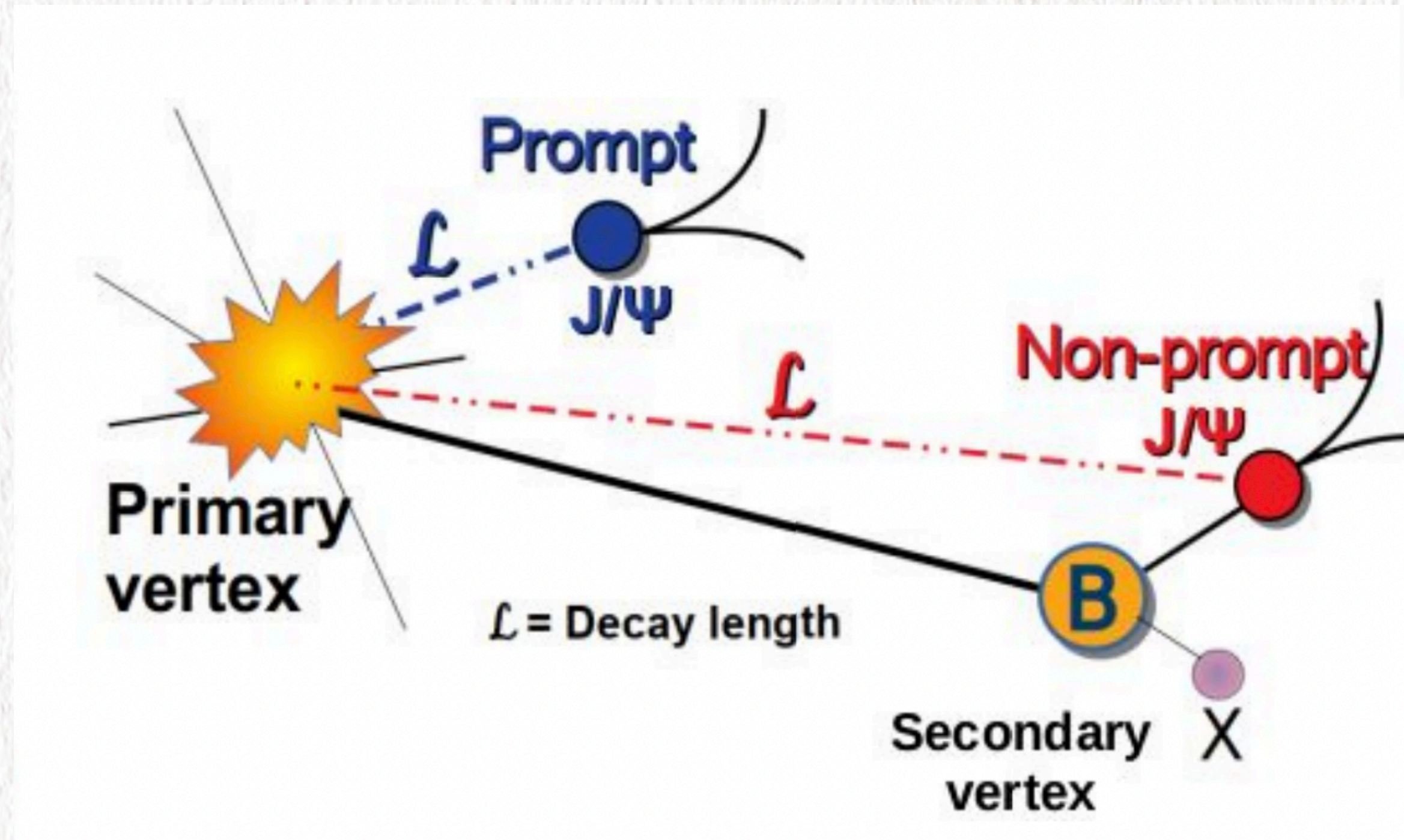


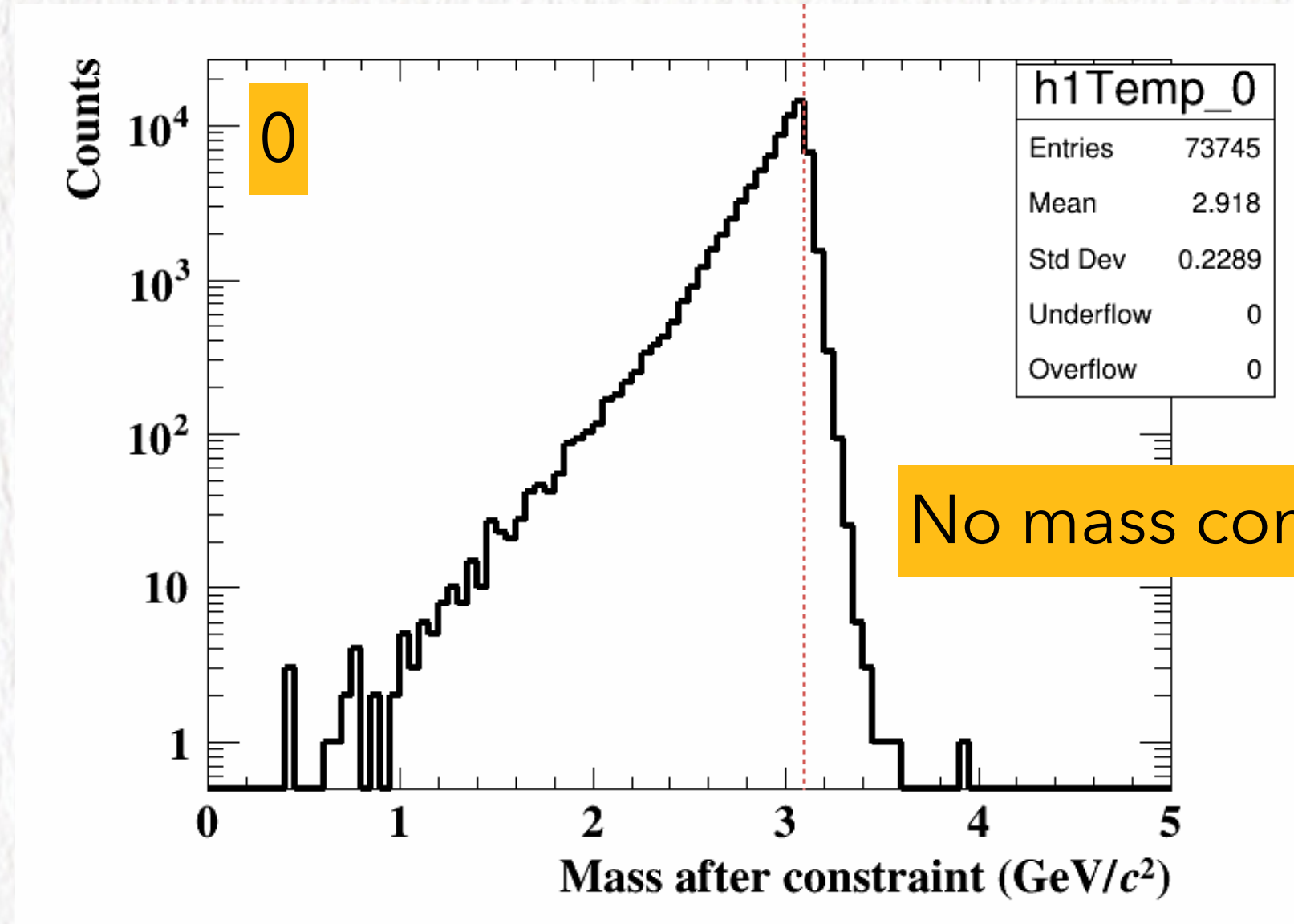
Motivation for Jpsi studies

- * We want to study beauty hadron production via non prompt Jpsi

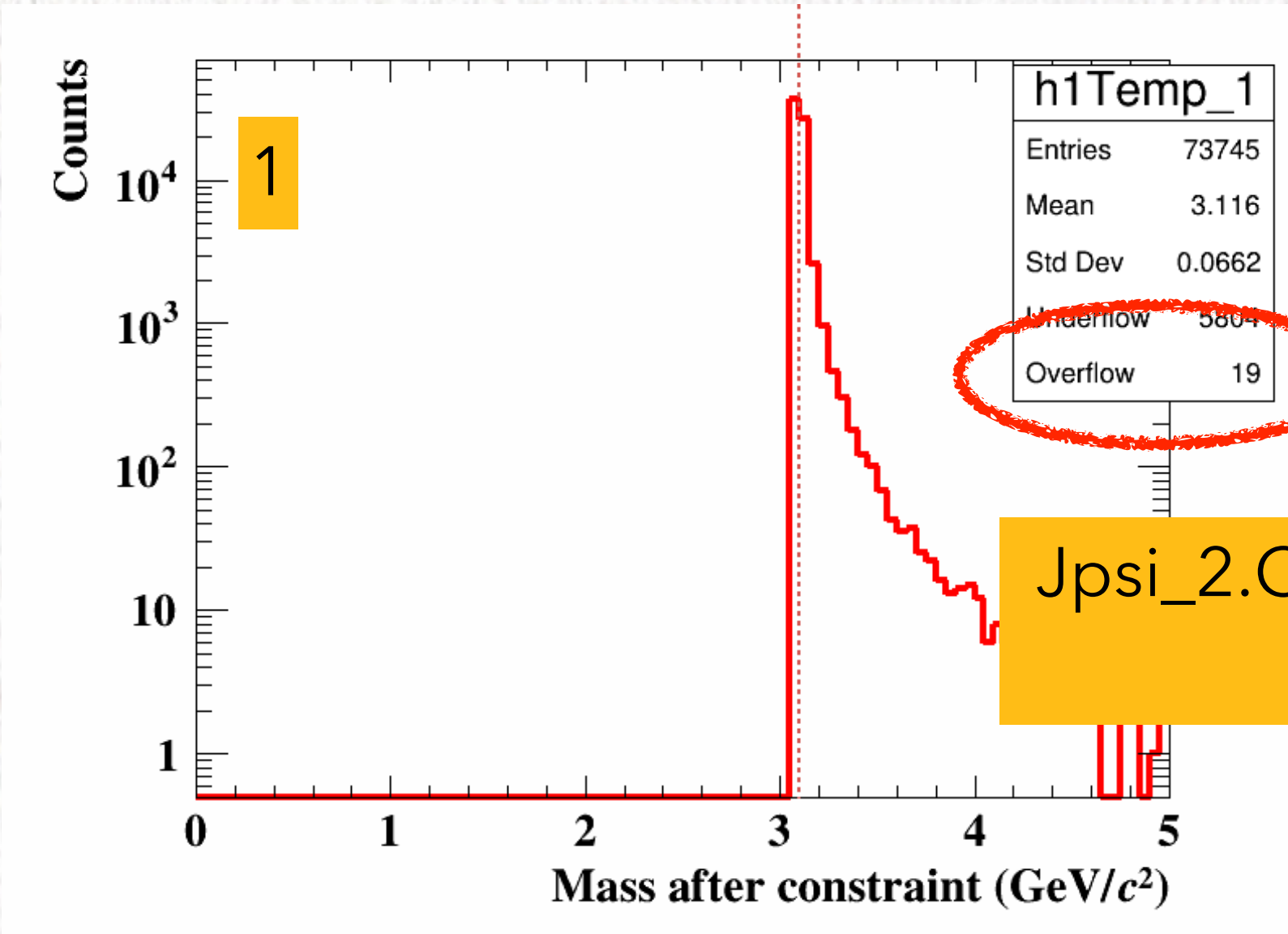


- * Here we want to study the effect of the mass constraint of the Jpsi when reconstructing the beauty hadron. —> This is a non straightforward problem because the Jpsi is not gaussian since electrons are affected by Bremsstrahlung

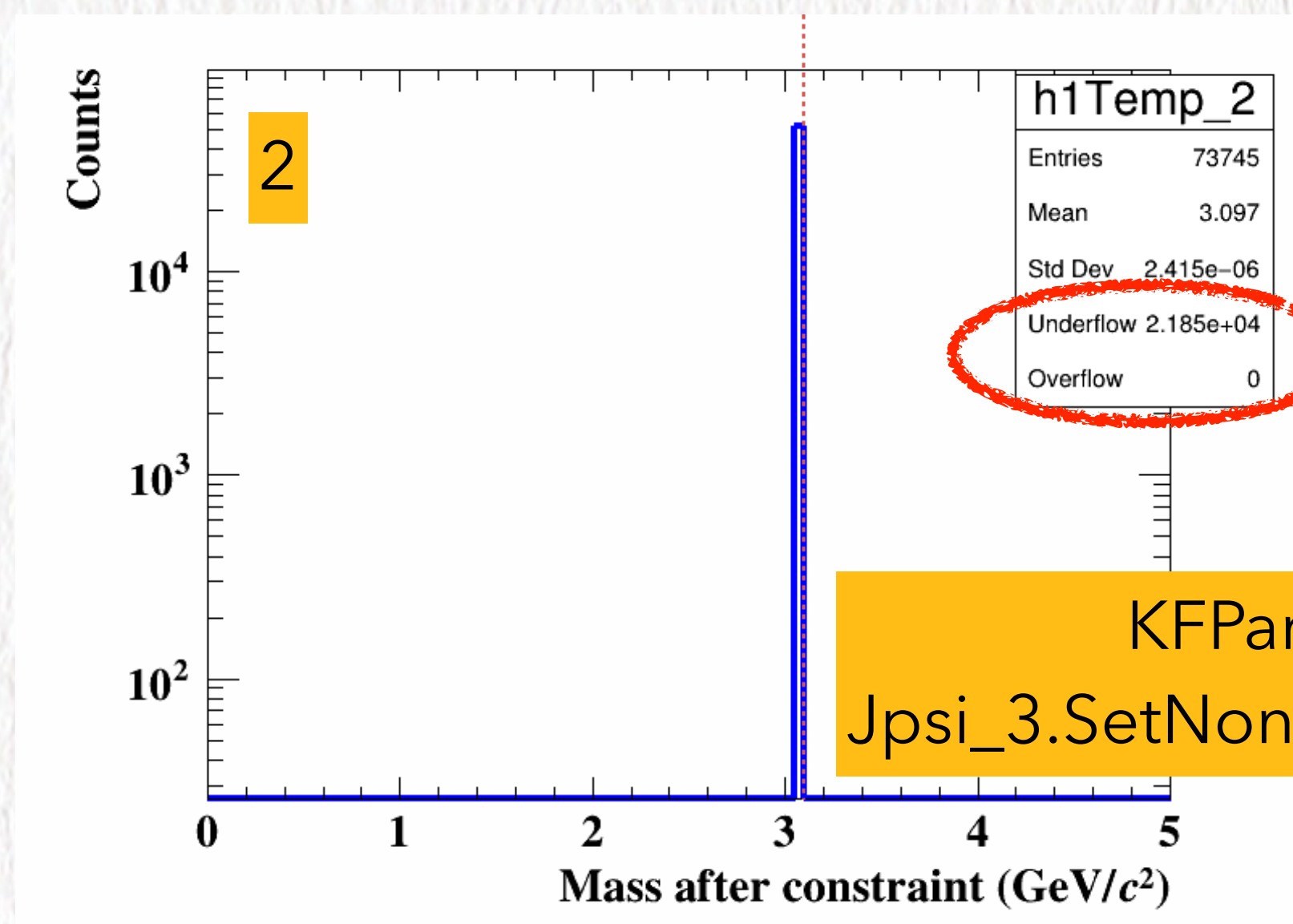
Mass distribution after mass constraint



No mass constraint

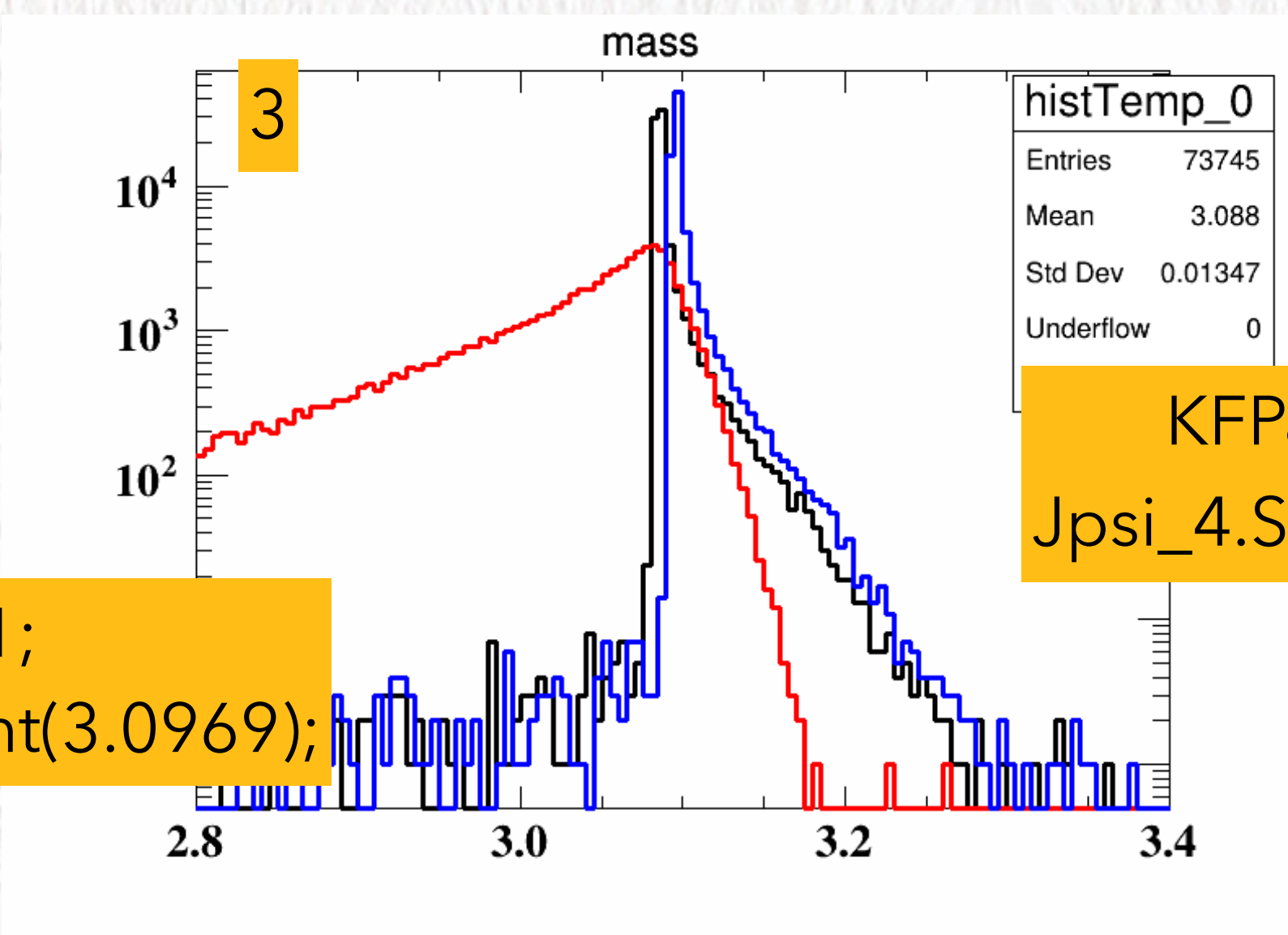


Jpsi_2.Construct([prong1,prong2],
2, null, 3.0969);



~ 30% lost

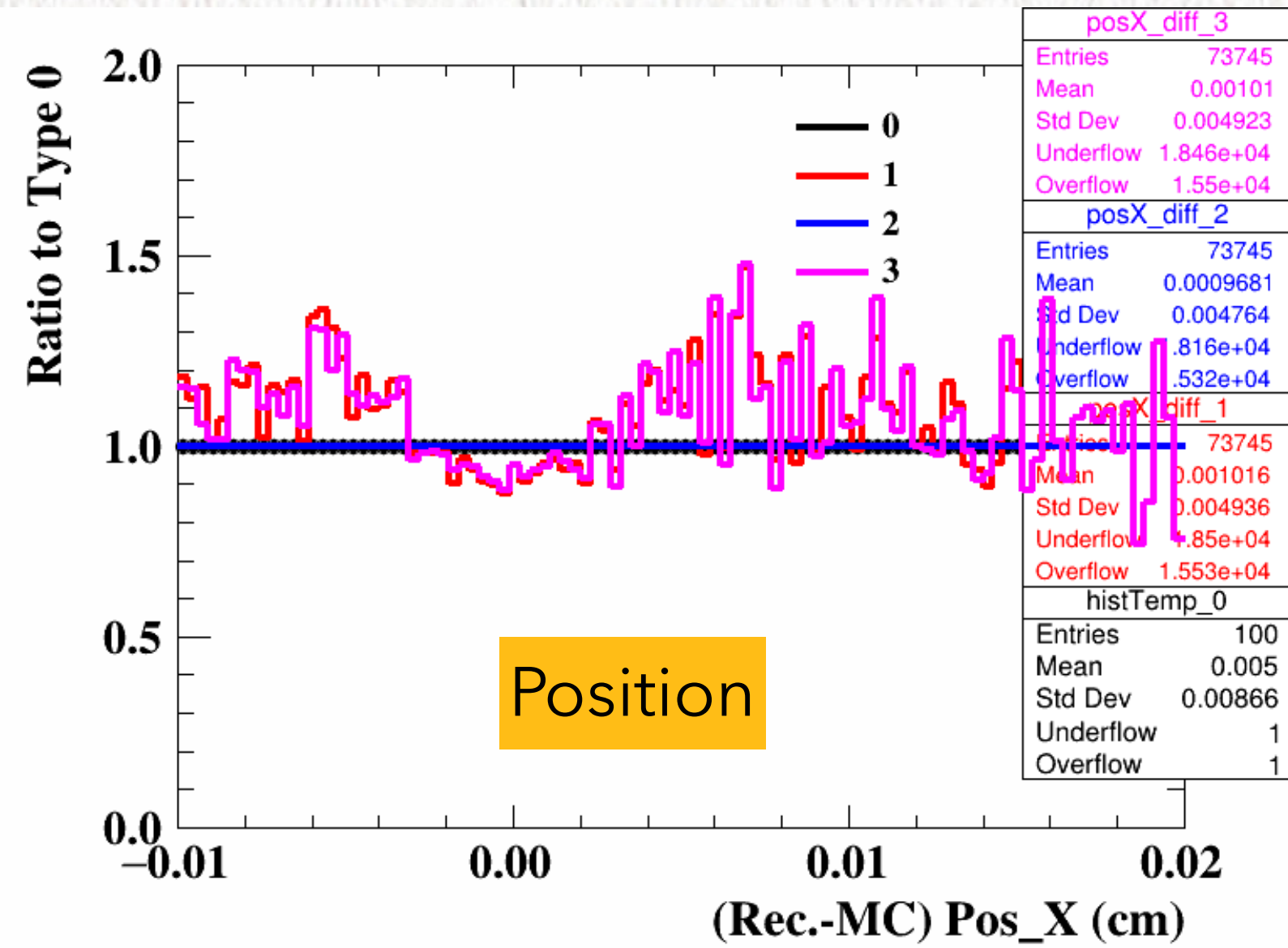
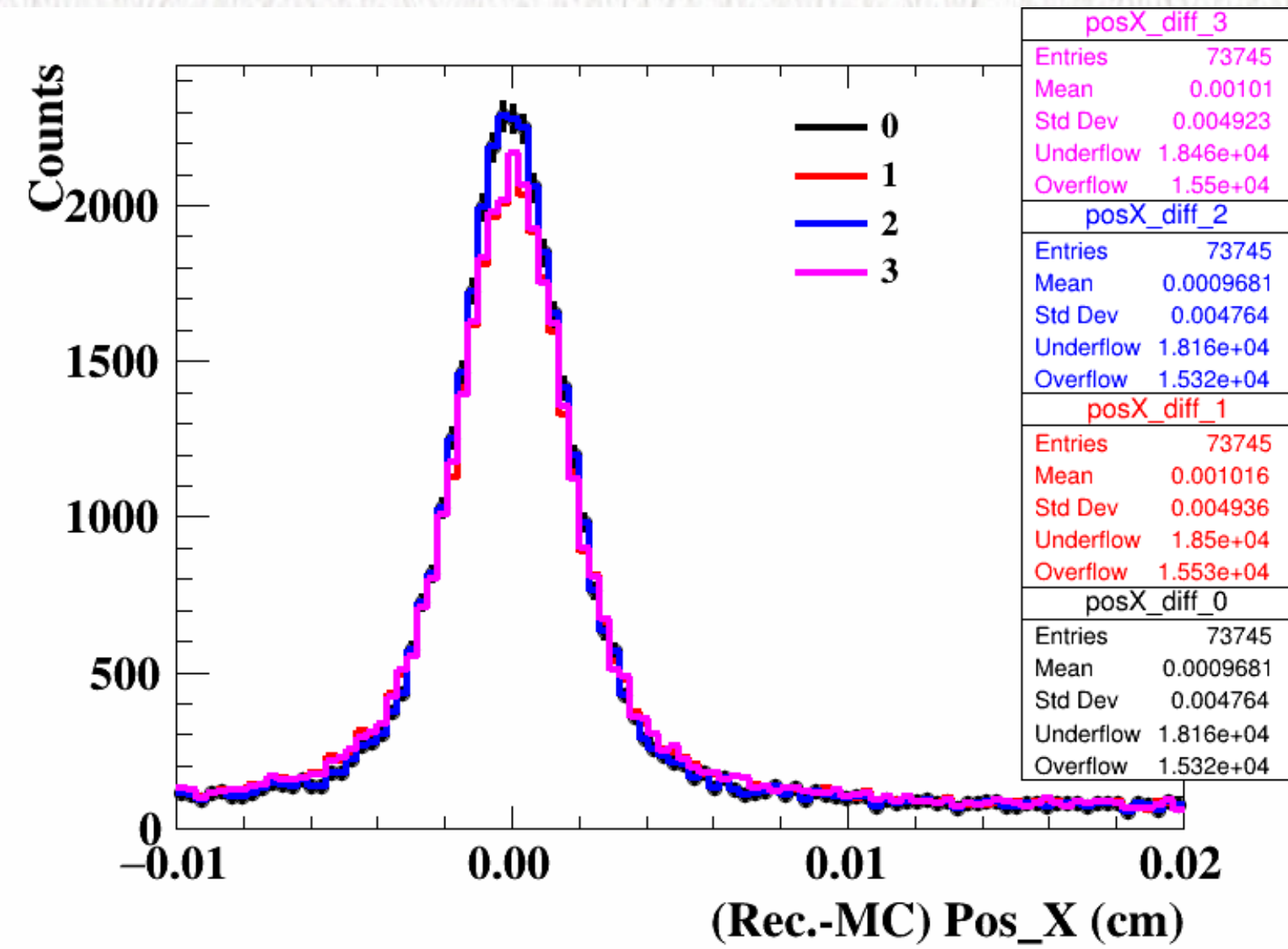
KFParticle Jpsi_3 = Jpsi_1;
Jpsi_3.SetNonlinearMassConstraint(3.0969);



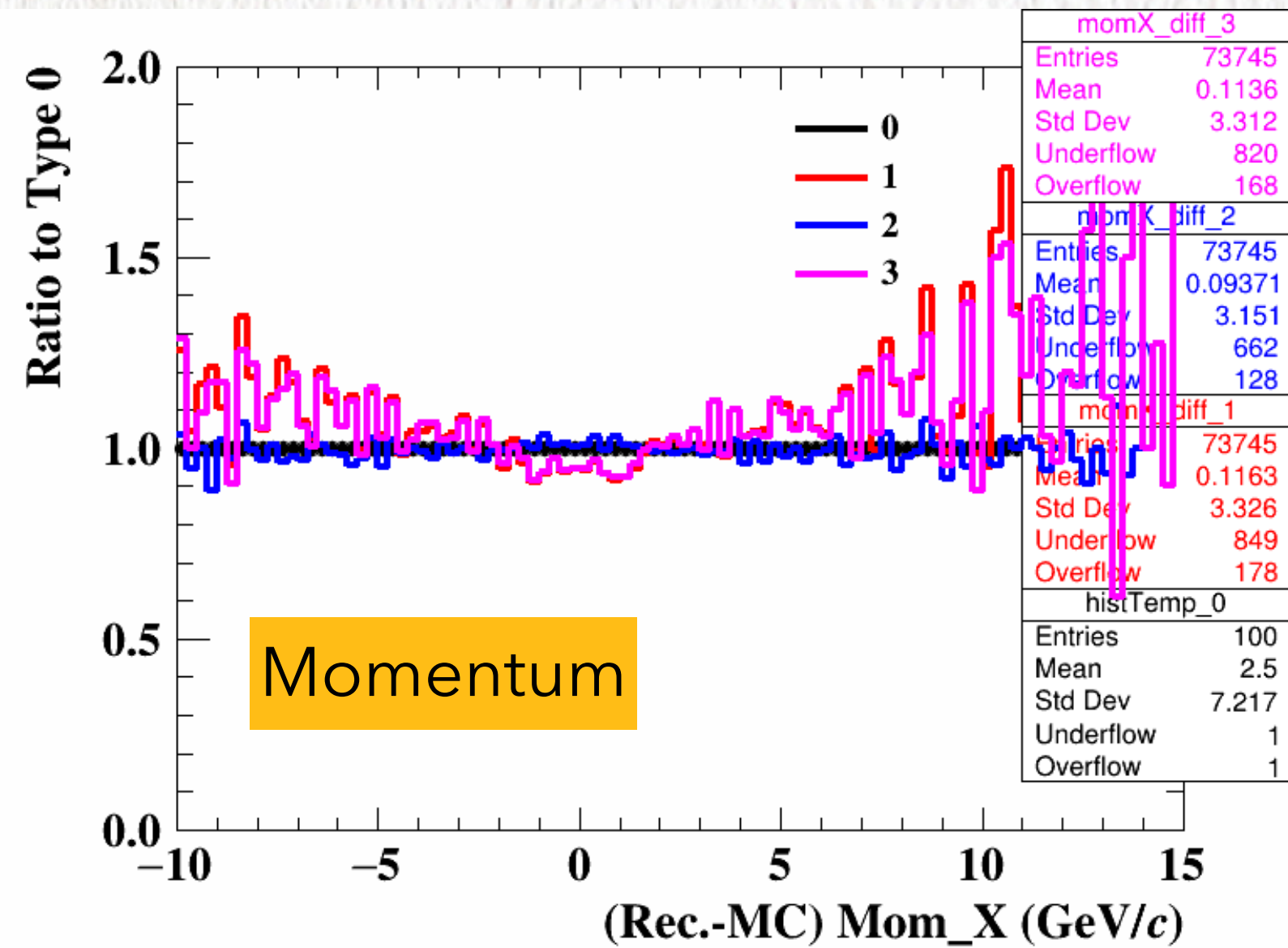
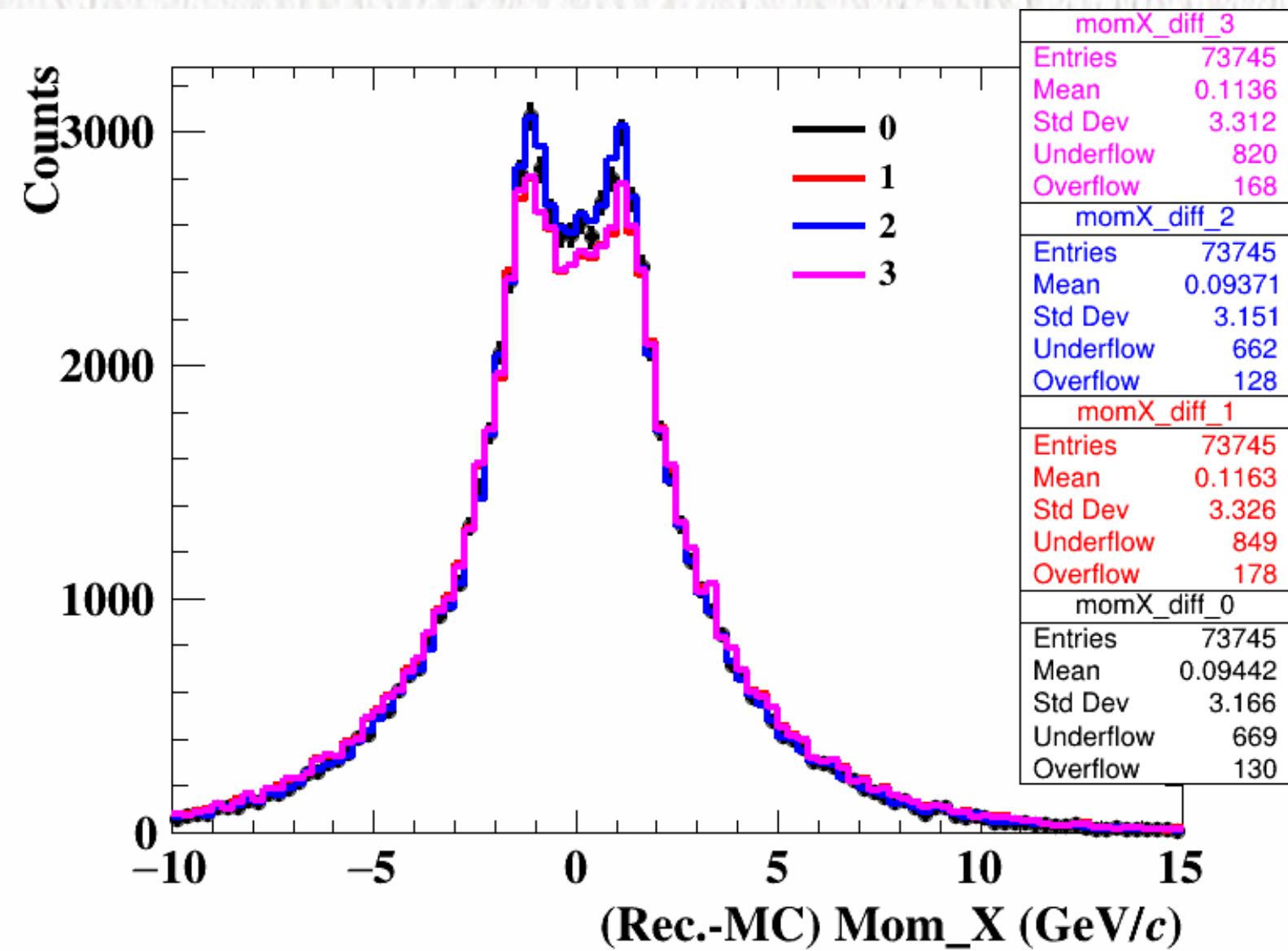
KFParticle Jpsi_4 = Jpsi_1;
Jpsi_4.SetMassConstraint(mass, σ);

(3.086,0.027);
(3.086,0.006);
(3.0969,0.006);

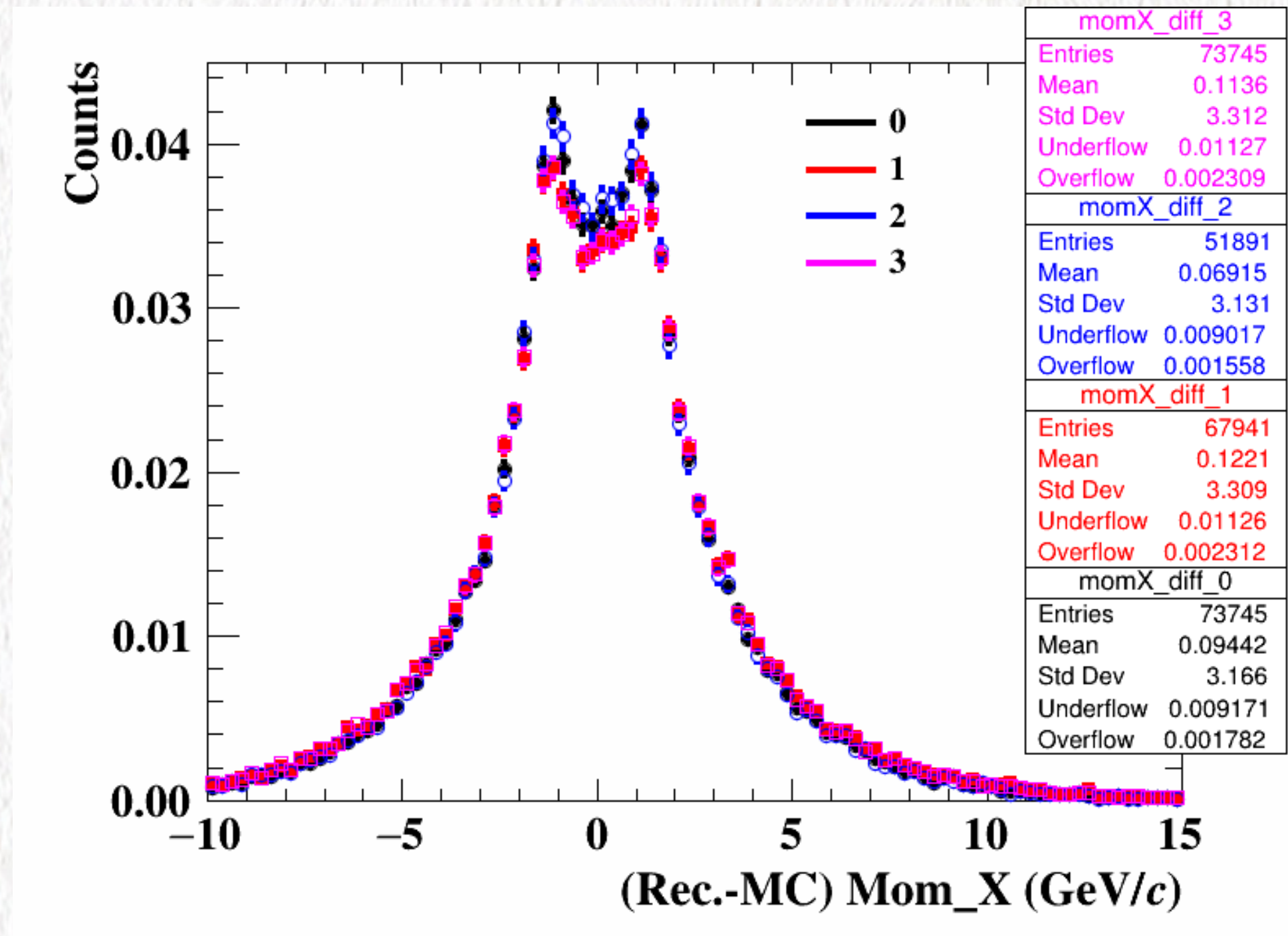
The position and momentum after mass constraint



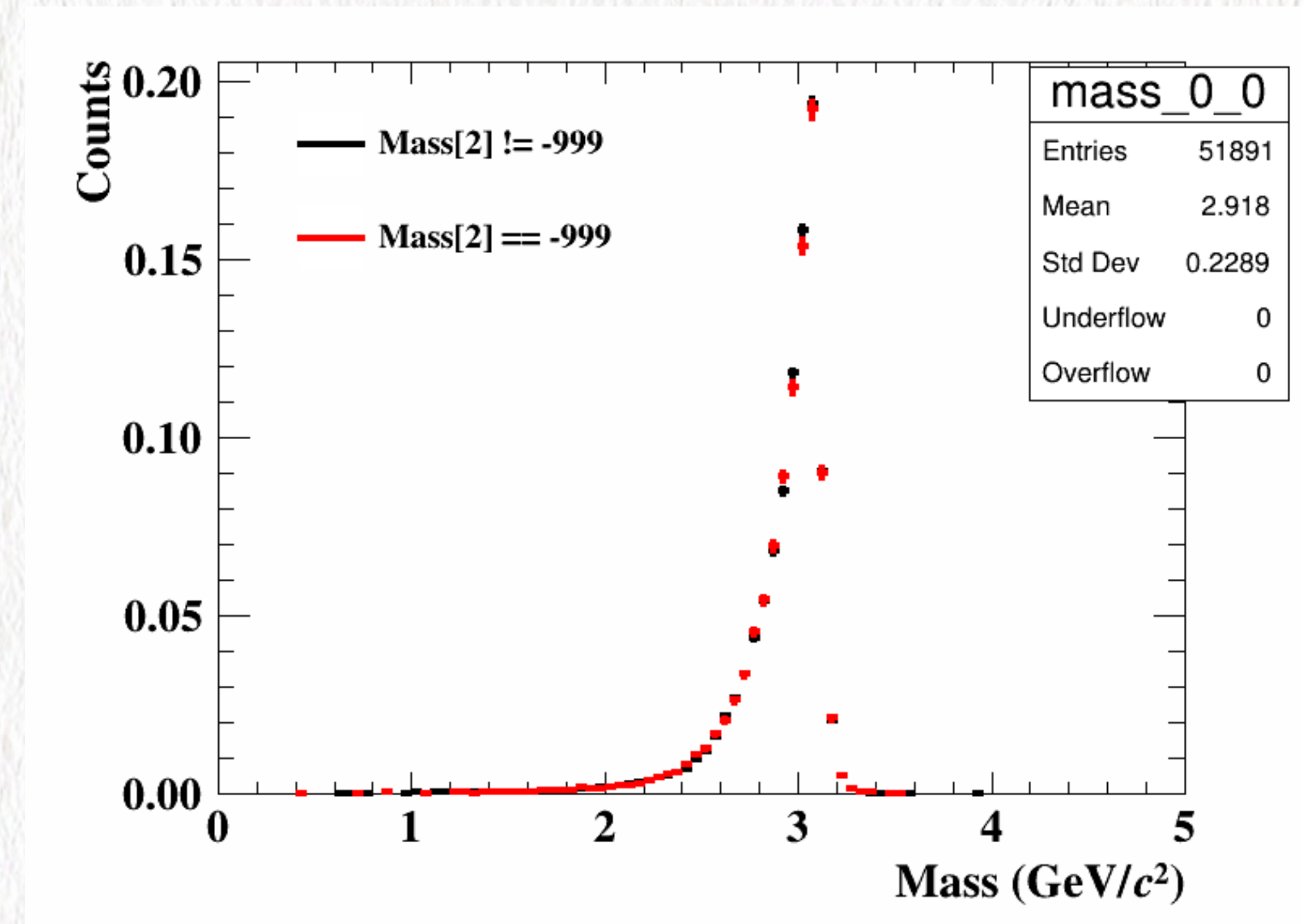
- **SetNonlinearMassConstraint** will not change the vertex position but the momentum
- **SetMassConstraint** will change both the position and momentum



Include both -999 and non -999 cases



Residual momentum comparison between no mass constraint and successful mass constraint (remove -999)



The mass without mass constraint when the **SetNonlinearMassConstraint** failed or not

Conclusion & Questions

- * The Conclusion: we should probably not set a mass constraint
The ***SetNonlinearMassConstraint*** doesn't change significantly position and momentum, but we loose 30% of good J_{ψ} \rightarrow However, no mass constraint will results in a non gaussian B meson mass distribution
- * With the ***SetMassConstraint*** we do not get the delta function and it modifies position and momentum of the SV. Not ideal for SV reconstruction
- * What will the ***SetNonlinearMassConstraint*** and ***SetMassConstraint*** do? The difference between the two?
- * What is the meaning of the ***SetMassConstraint(3.096,0)***? But the width of the mass (after mass constraint) is not zero.
- * Why there are some many failures for the ***SetNonlinearMassConstraint***?