

Correlations between Parton Shower splits and Hadronic Jet substructure observables in JEWEL

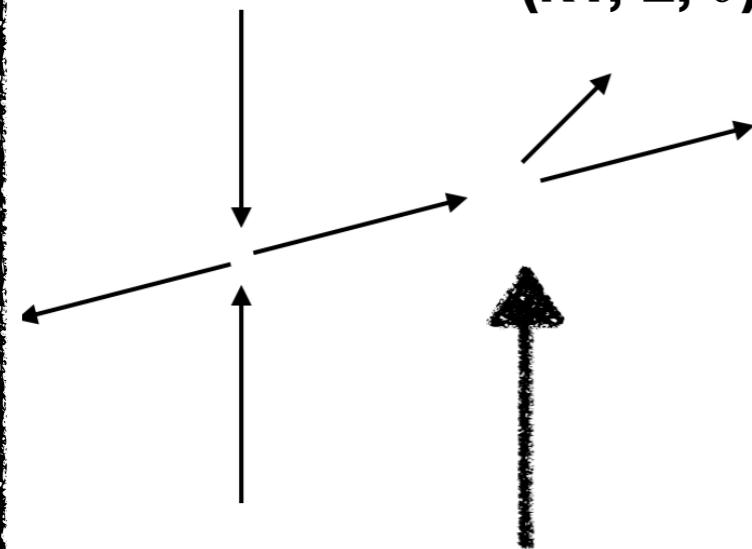
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August 15th, 2019

EMMI RRTF @ GSI

Y-Axis

Hardest k_T split (k_T, z, θ)

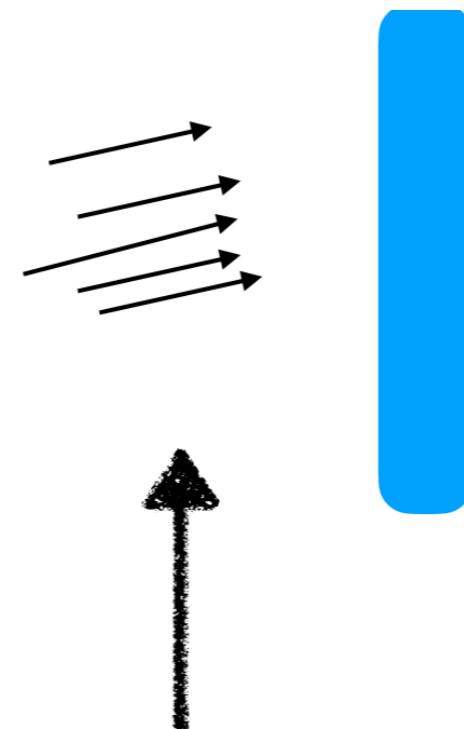


- Parton Shower
 $1 \rightarrow 2$
Splittings

From yesterday -

X-Axis

Hardest k_T split Post-Clustering (k_T, z, θ)

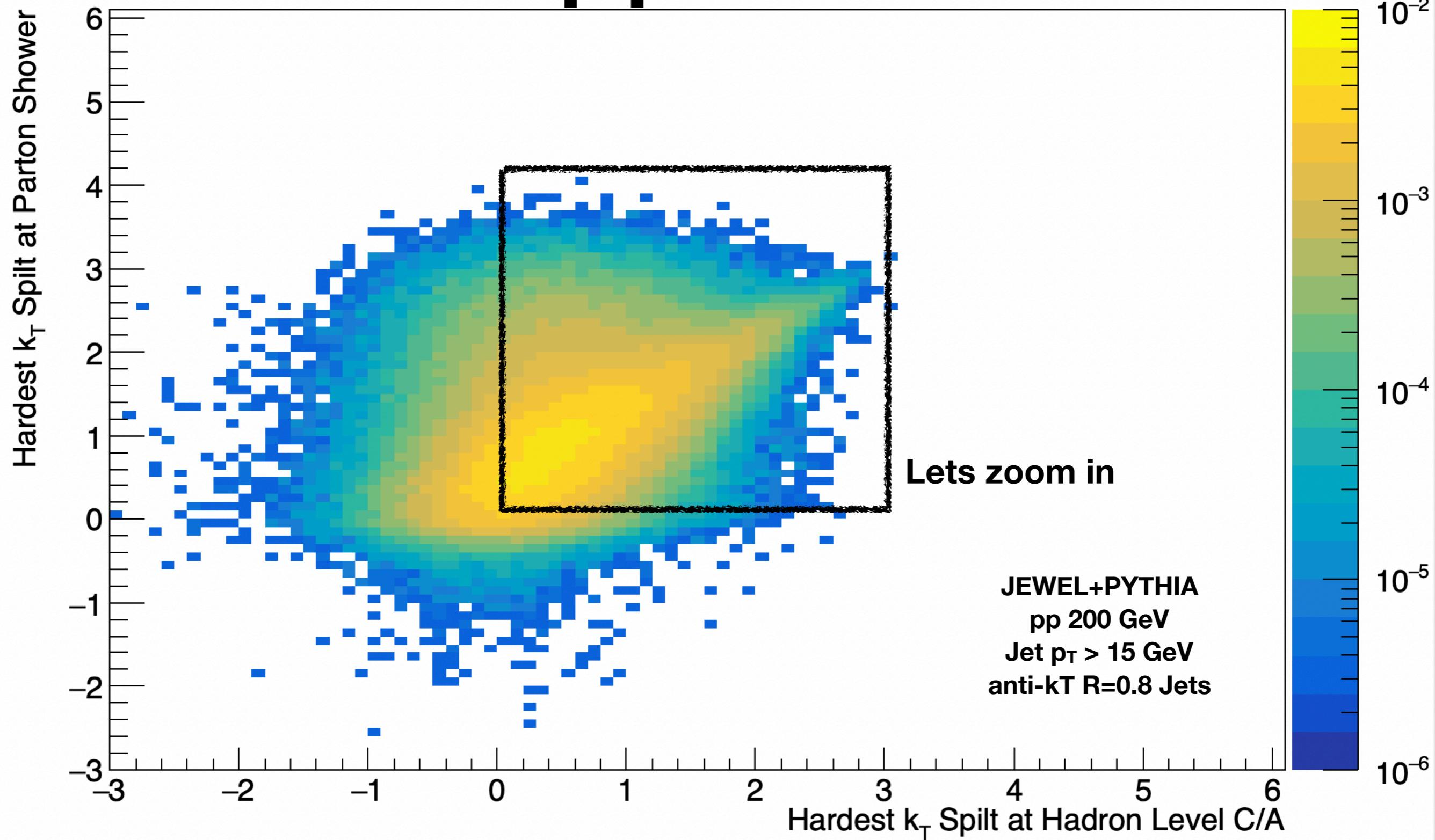


- Partons before hadronization : Jet clustering + reclustering + follow harder prongs

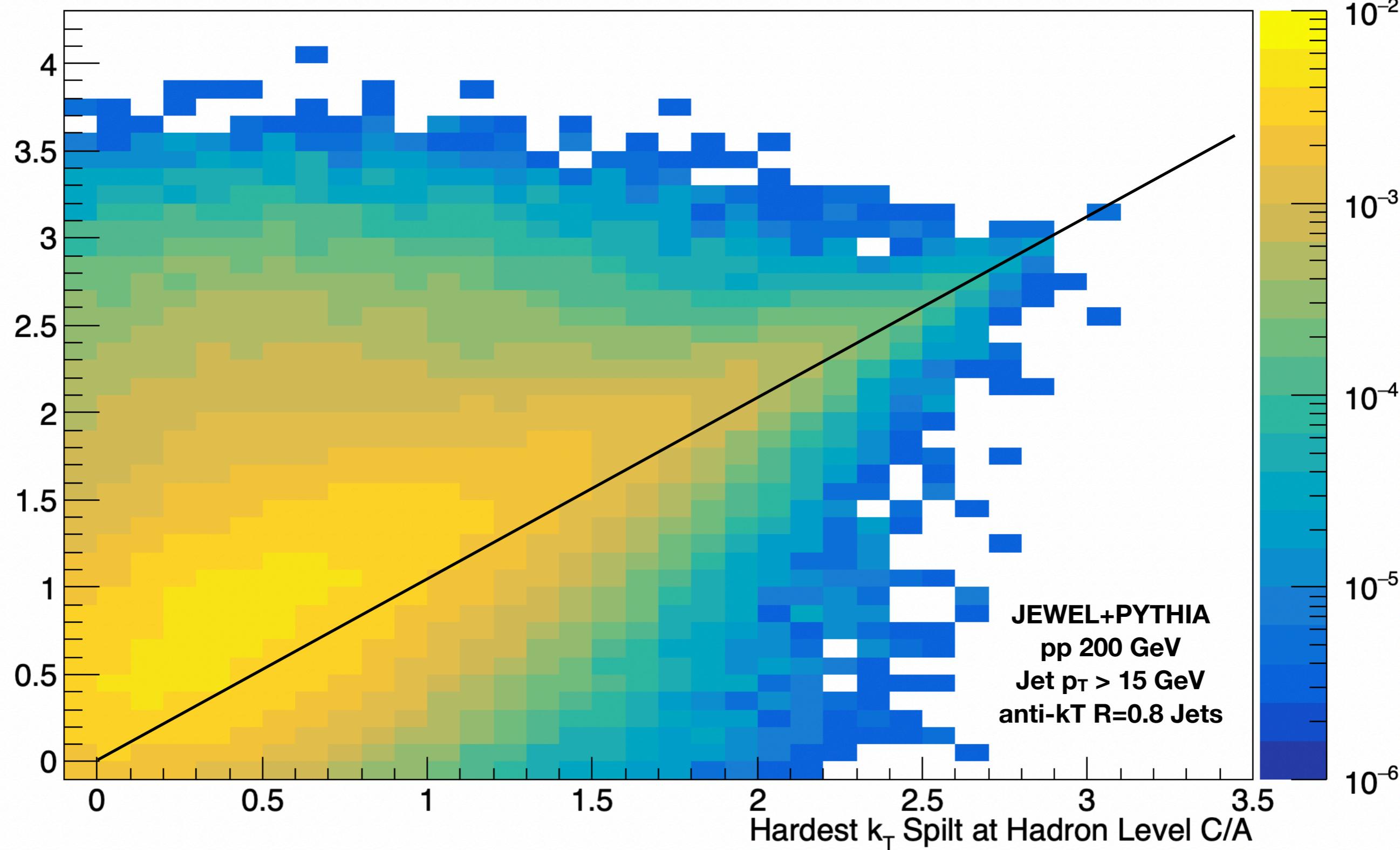
- Final state hadrons : Jet clustering + reclustering + follow harder prongs



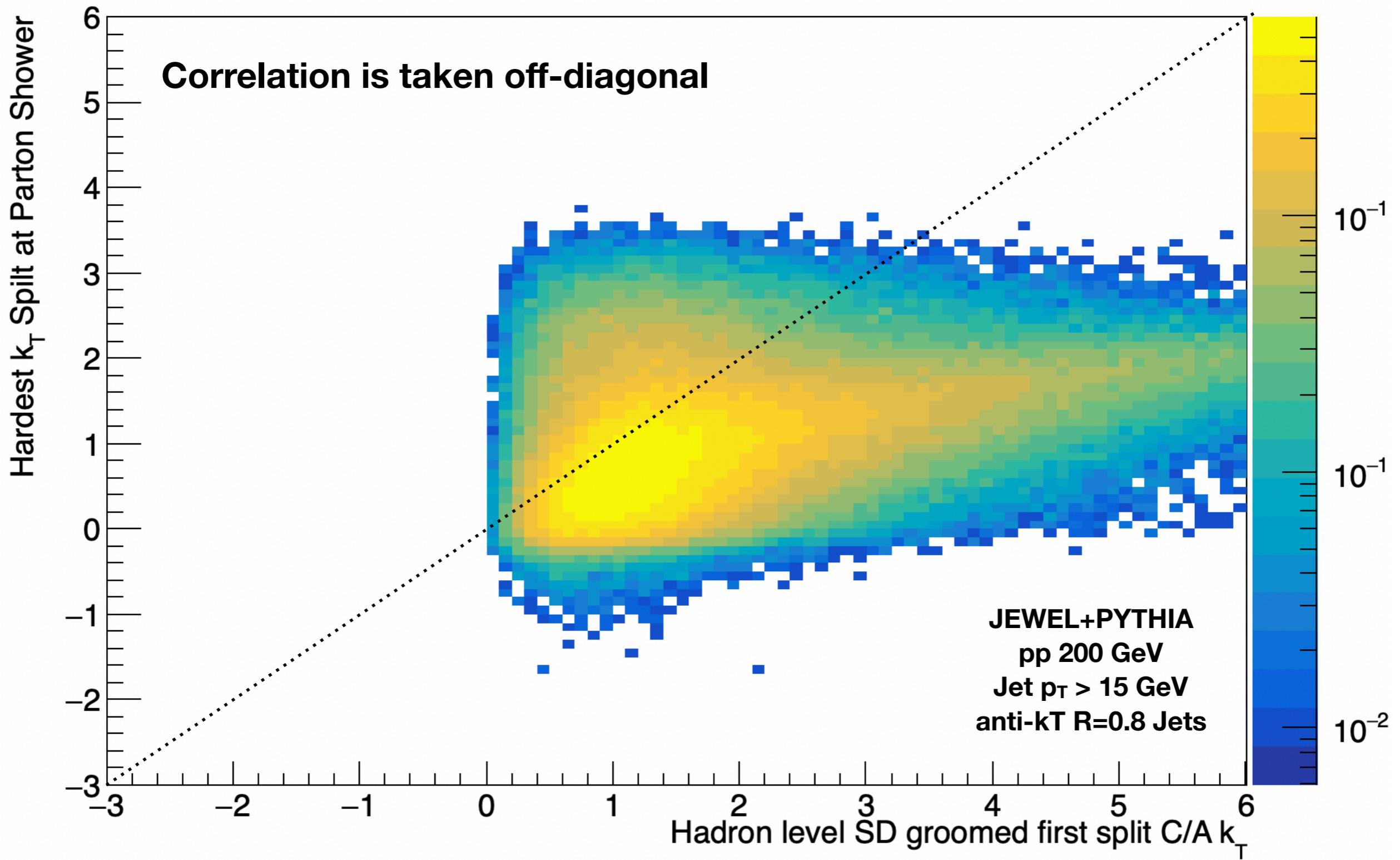
RHIC pp 200 GeV



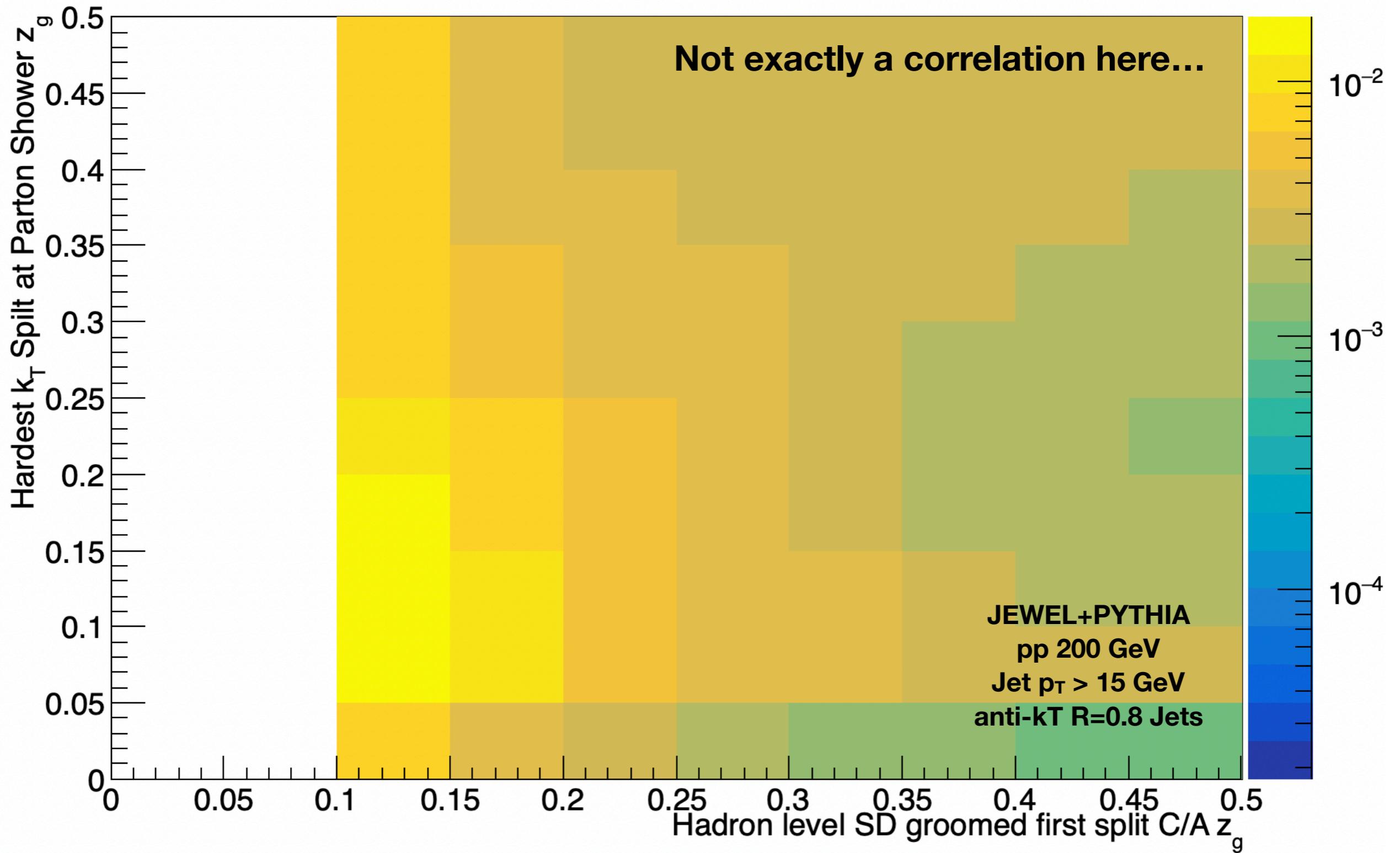
Hardest k_T Spilt at Parton Shower



w/ Grooming on the x-axis



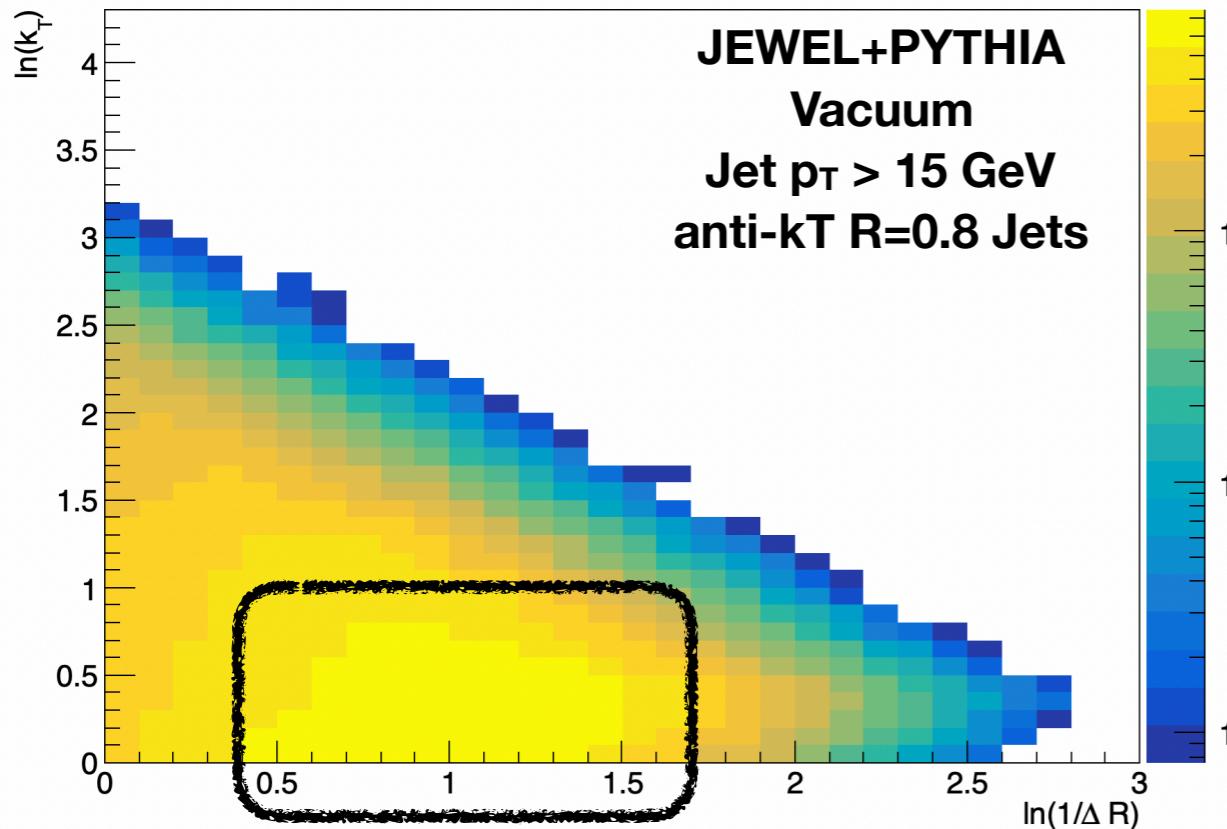
Parton shower hardest split z vs Softdrop zg



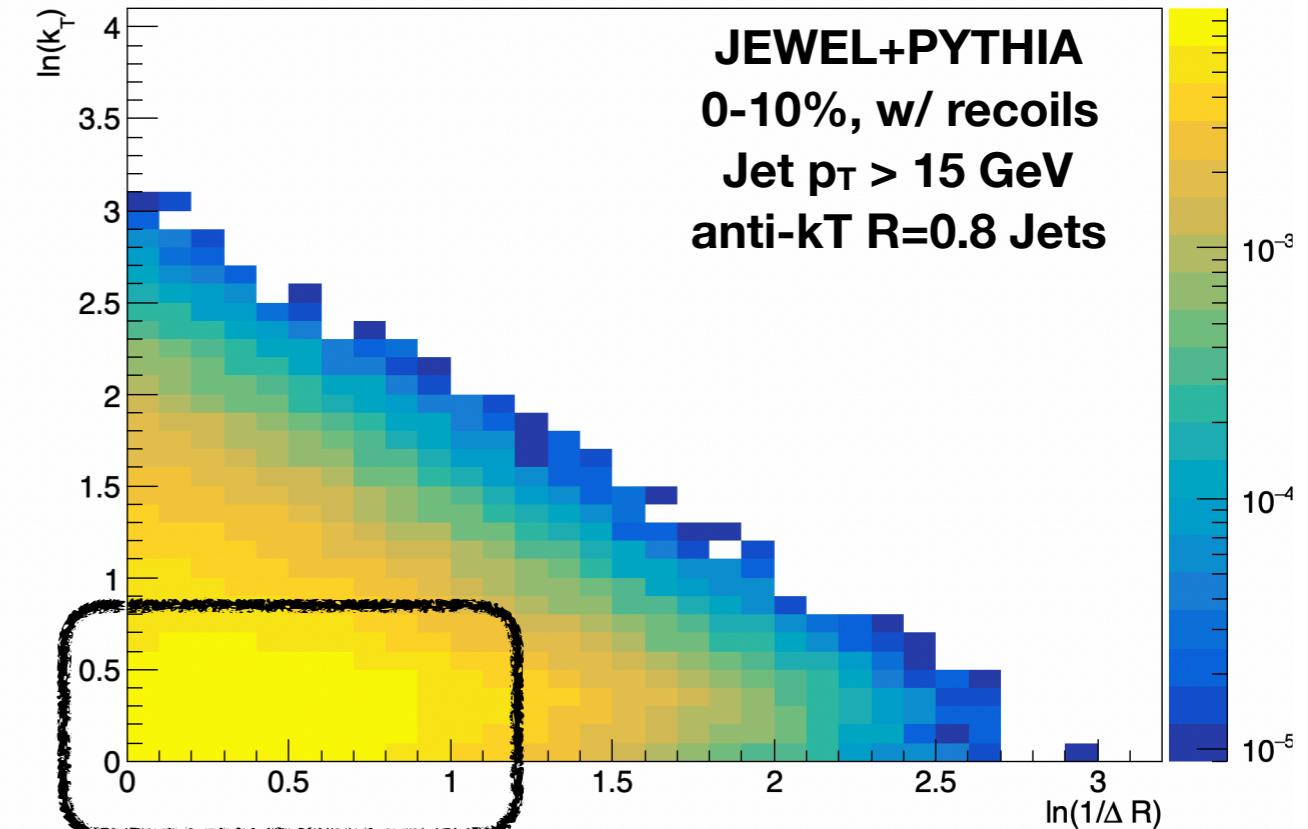
Effect of jet quenching in the Lund Plane

Note - Only splittings

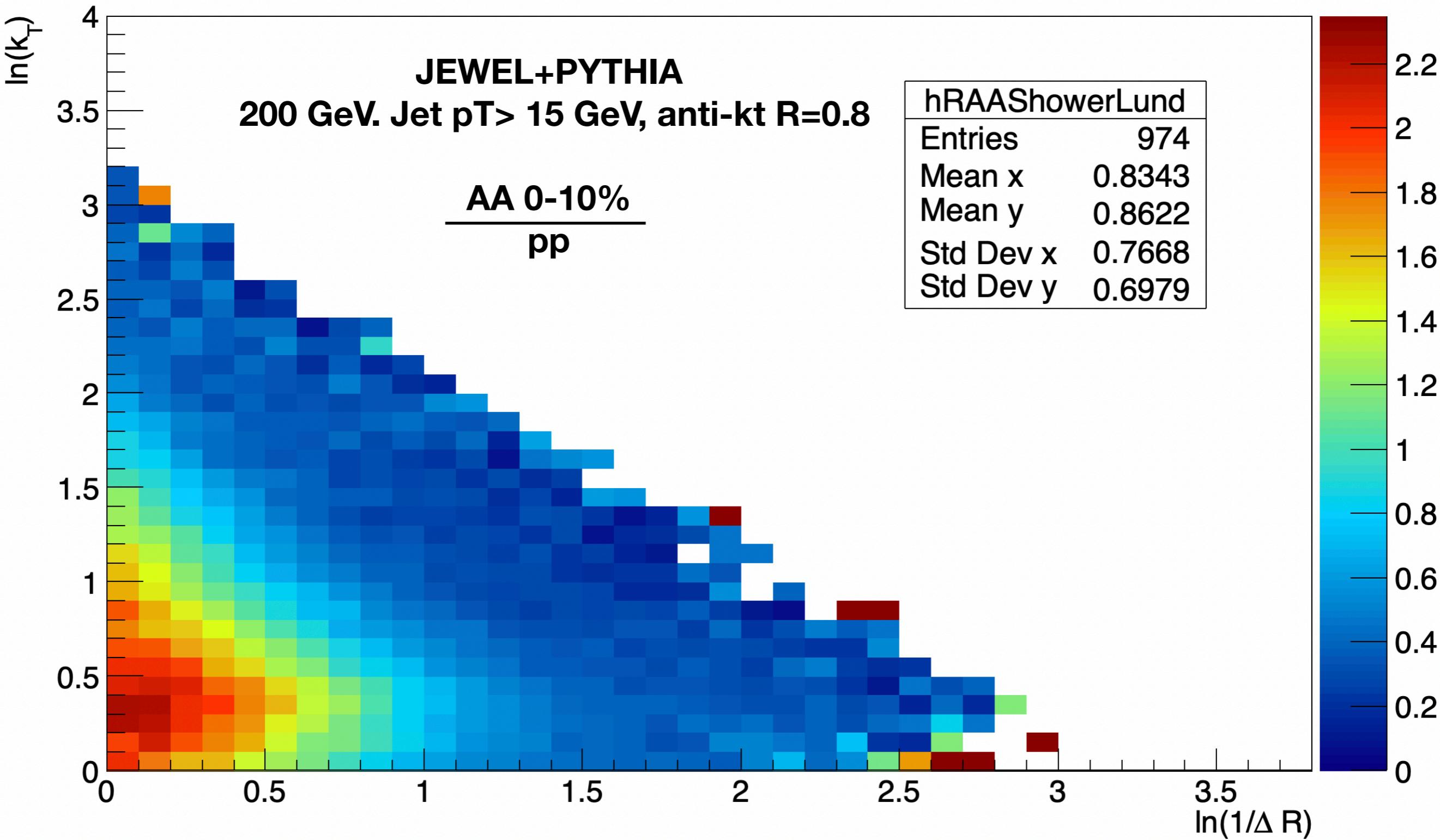
Parton Shower Lund Plane



Parton Shower Lund Plane

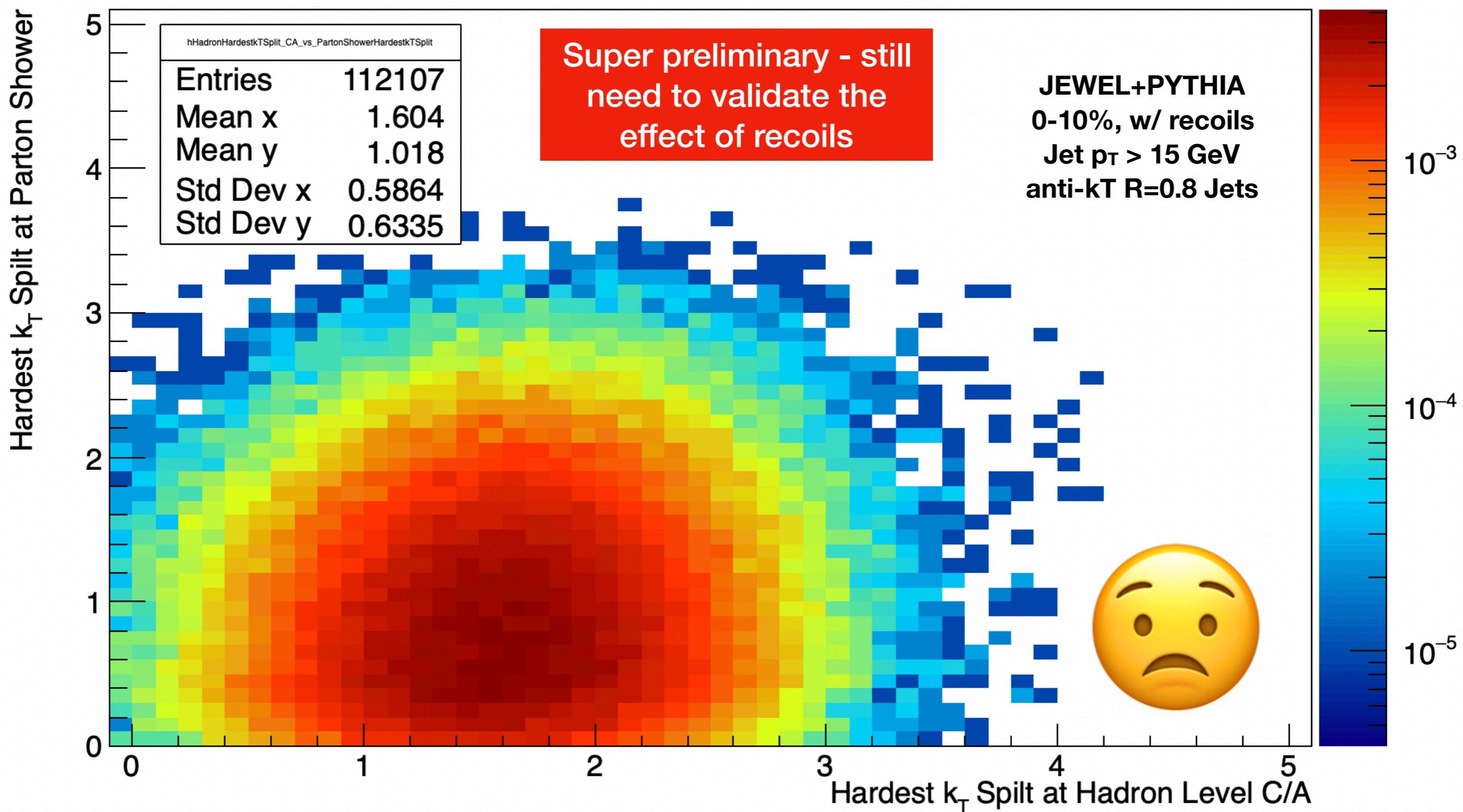


- The blob seems to have moved down and to the right
 - Softer and wider emissions (these are just splittings, not recoils scatterings)
- Lets look at the ratios - (also change in color palette in the next figures)

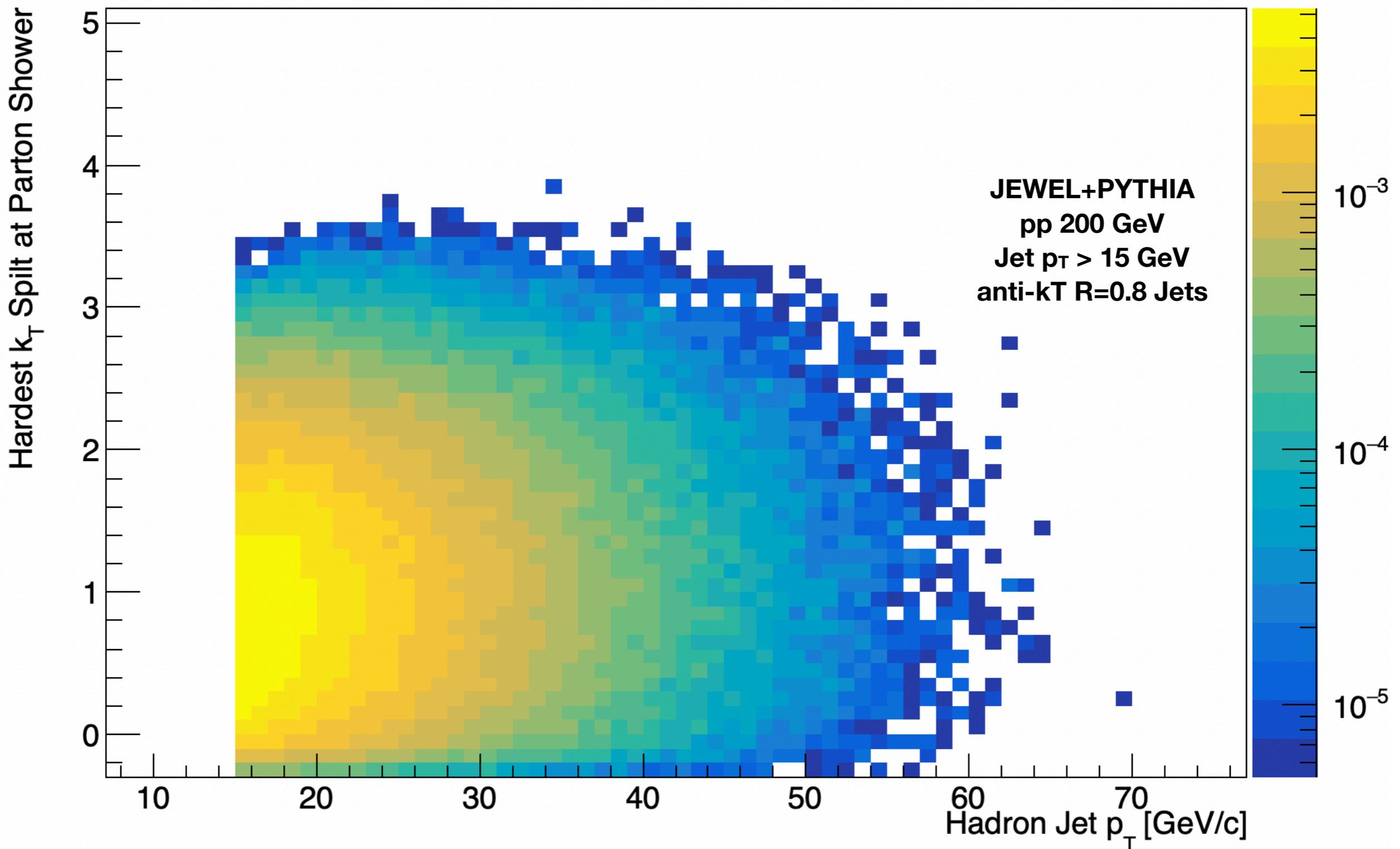


- Suppression of harder emissions and enhancement of wide-angle soft emissions

What is the effect on the correlation due to quenching+recoils?



Backup



- Kinematic reach of the dataset - We can try and enhance the correlation with higher p_T jets (say > 30 GeV)

