

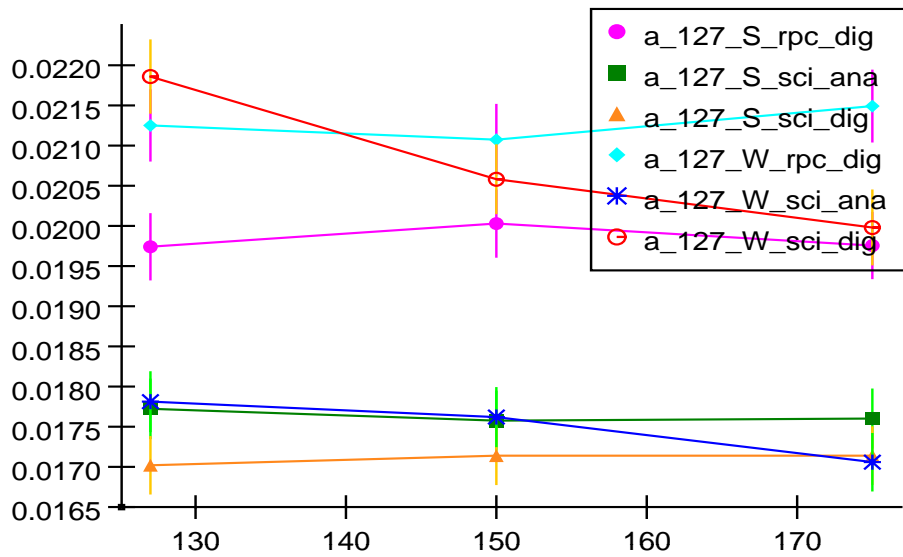
# PFlow R dependence update

Ron Cassell

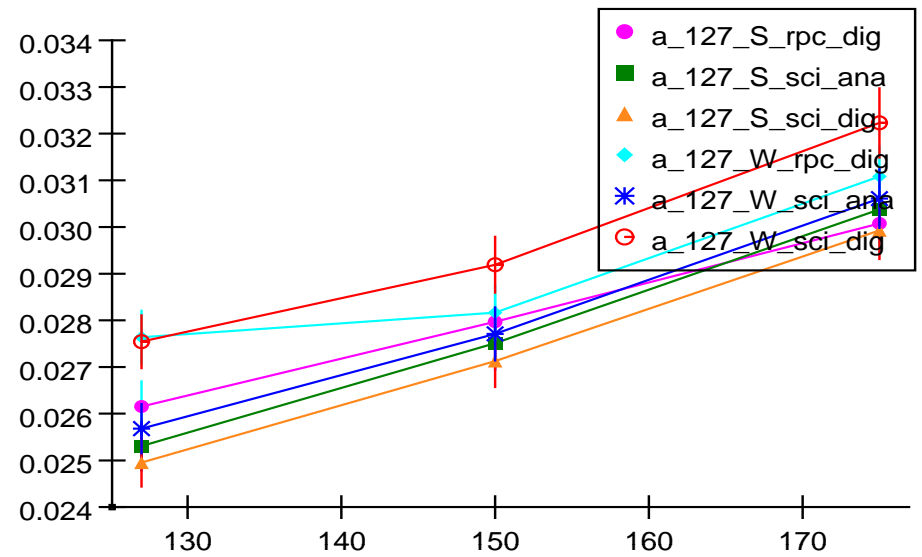
5/14/08

- Last week I showed the mass resolution in  $ZZ \rightarrow qq\nu\nu$  events at 500 GeV getting worse in the PPR reconstruction as  $R$  increased

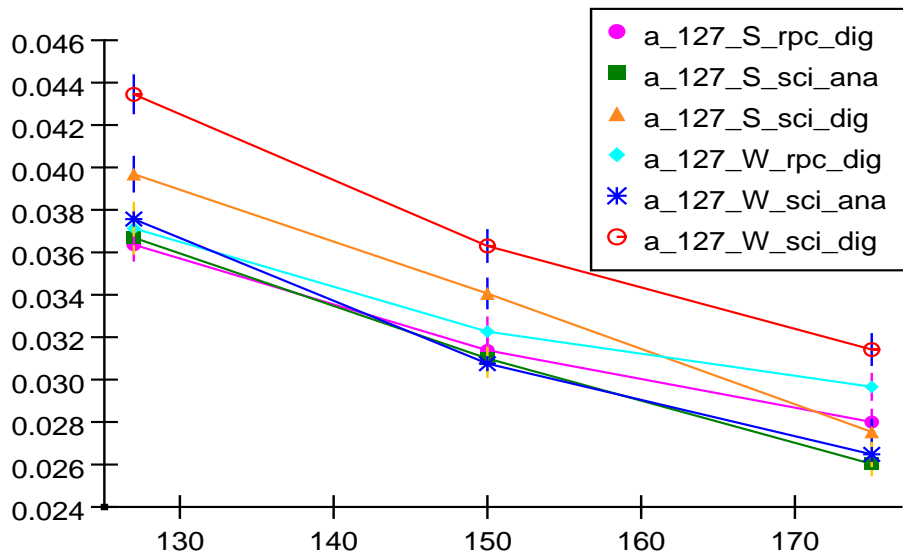
PPR ZZ events: eventEres vs R



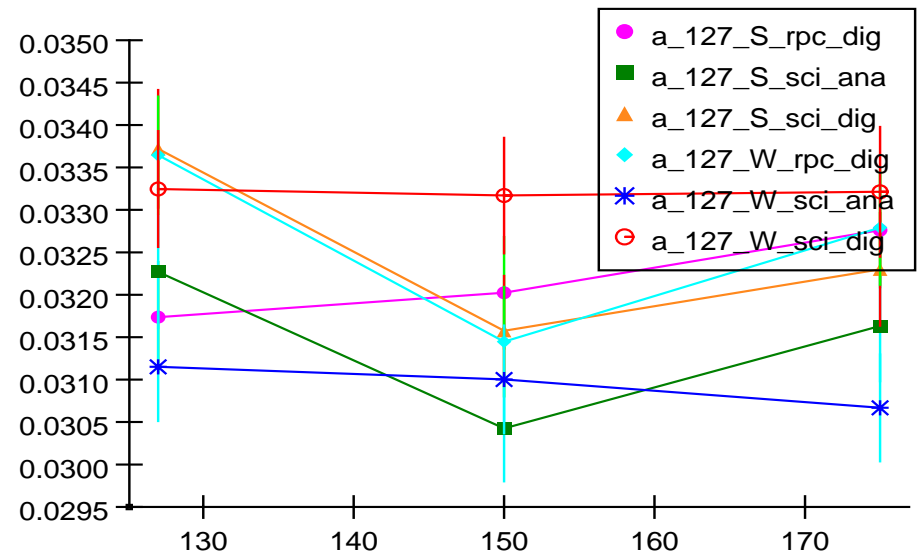
PPR ZZ events: eventMres vs R



DT>2 ZZ events: eventEres vs R



DT>2 ZZ events: eventMres vs R

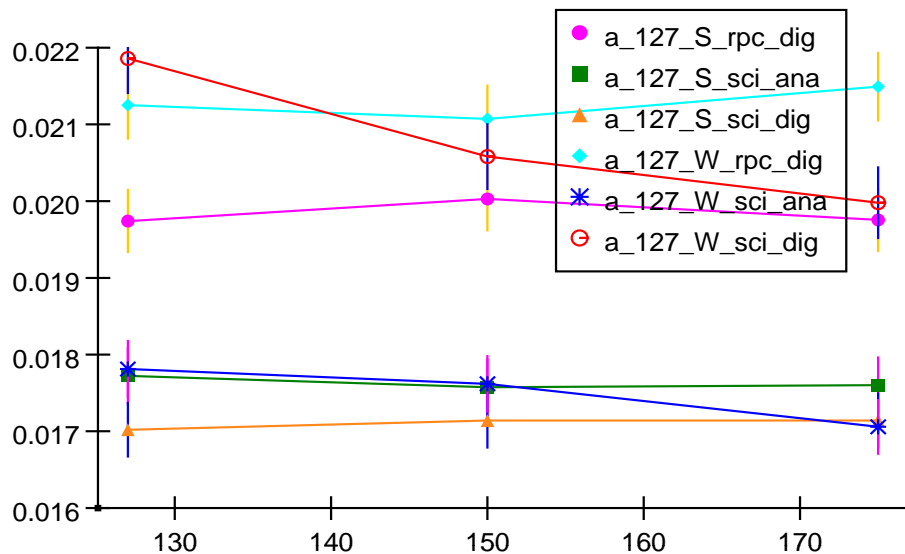


# Resolution vs R

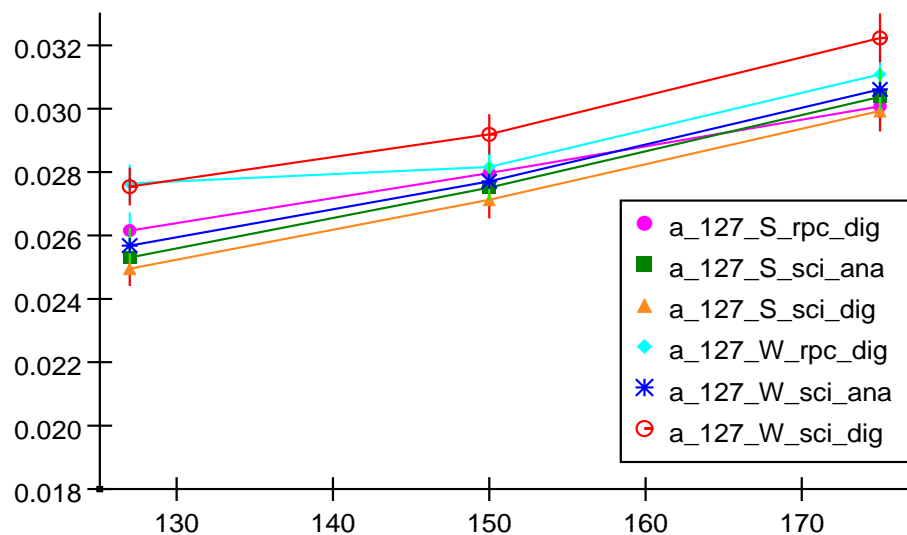
- PPR – mass resolution worse as R increases, at 175cm whatever drives this effect dominates the energy resolution term
- Hypothesis: # of decays and interactions increase, and incorrect treatment of these cases (no kink reconstruction) dominates the mass resolution

- To test this hypothesis, I ran the perfect pattern recognition reconstruction using the Generator final state particles

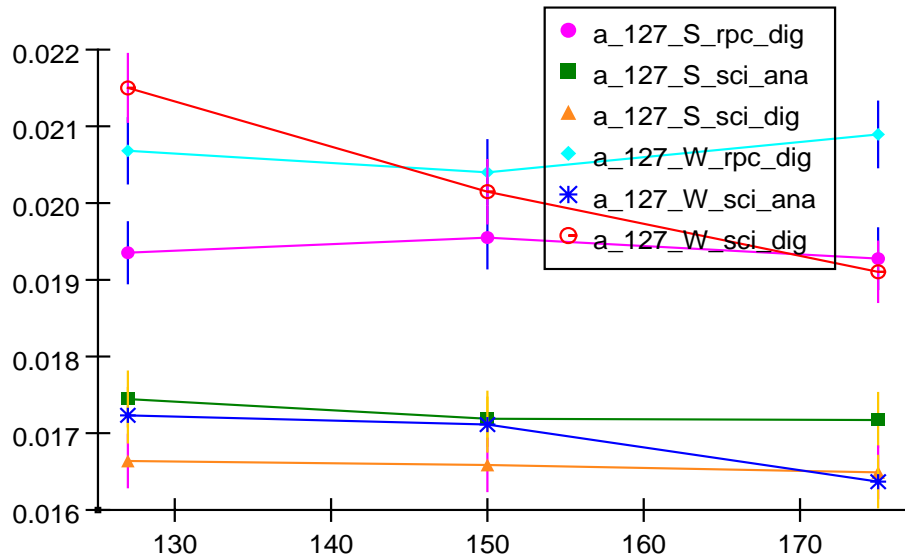
PPR ZZ events:eventEres vs R



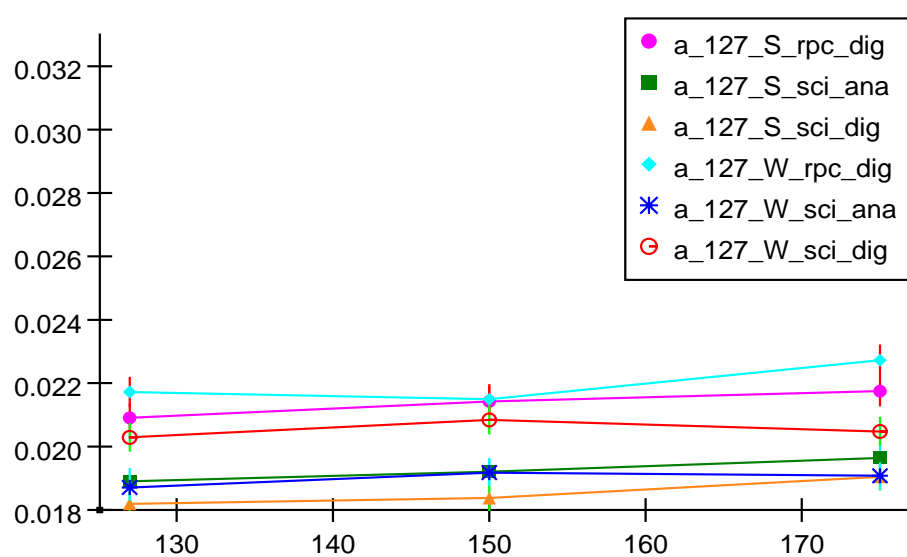
PPR ZZ events:eventMres vs R



PPRGen ZZ events:eventEres vs R



PPRGen ZZ events:eventMres vs R



# Conclusion

- Hypothesis confirmed. Careful handling of decays and interactions important to dijet mass resolution.