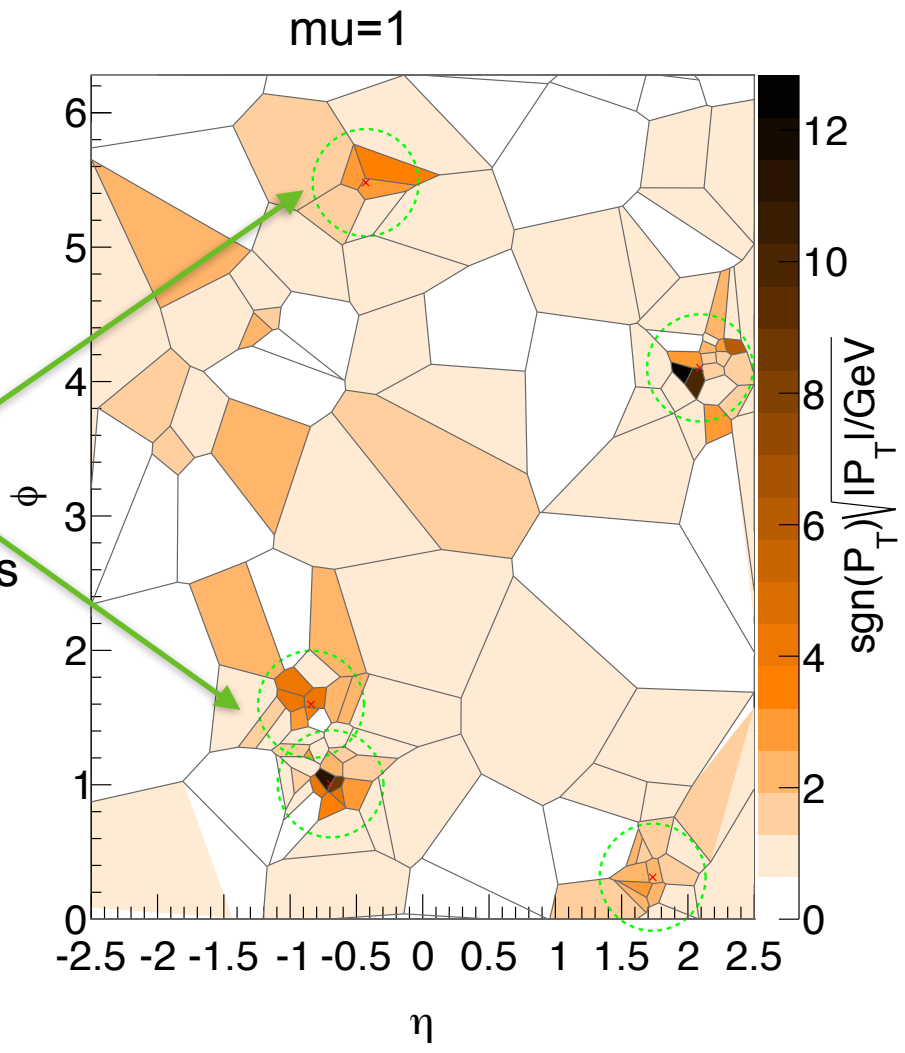
Voronoi Area Subtraction

- The method associates a pileup sensitive quantity to each cluster: the Voronoi area.

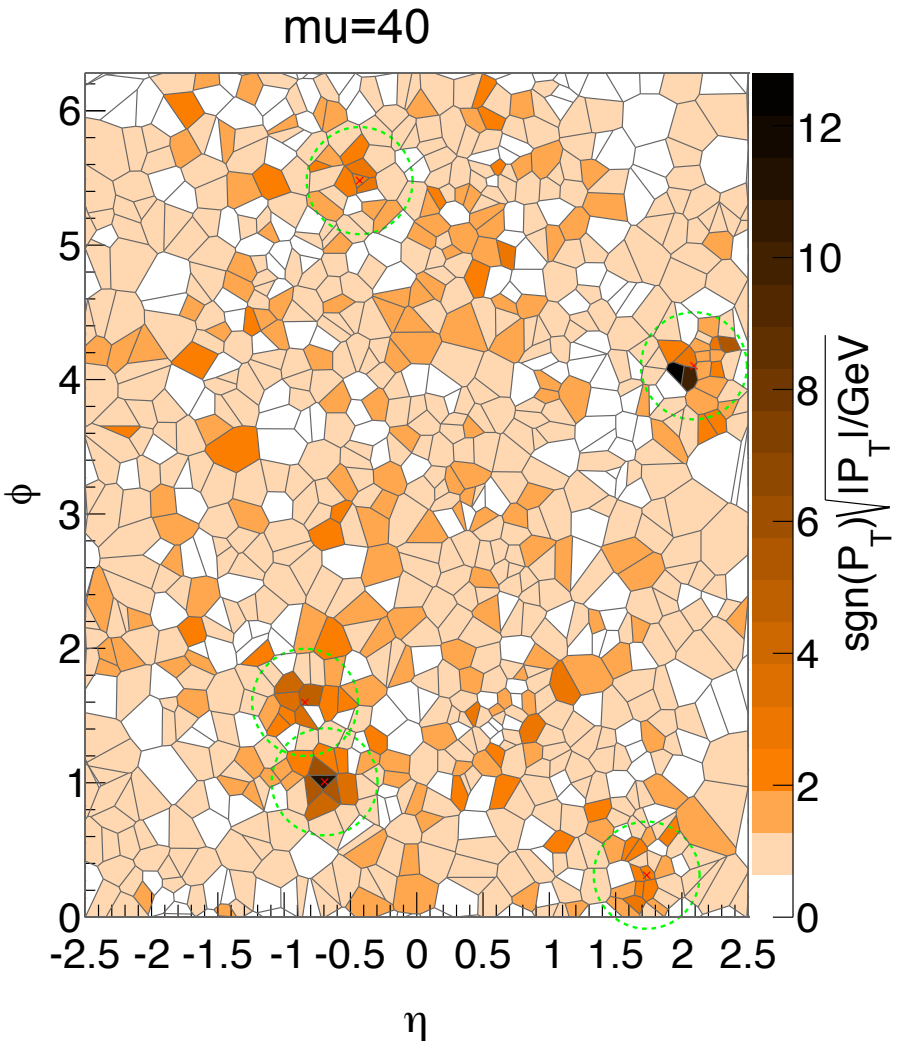
- In absence of pileup Voronoi areas are large, but ρ~0.



Voronoi Area Subtraction

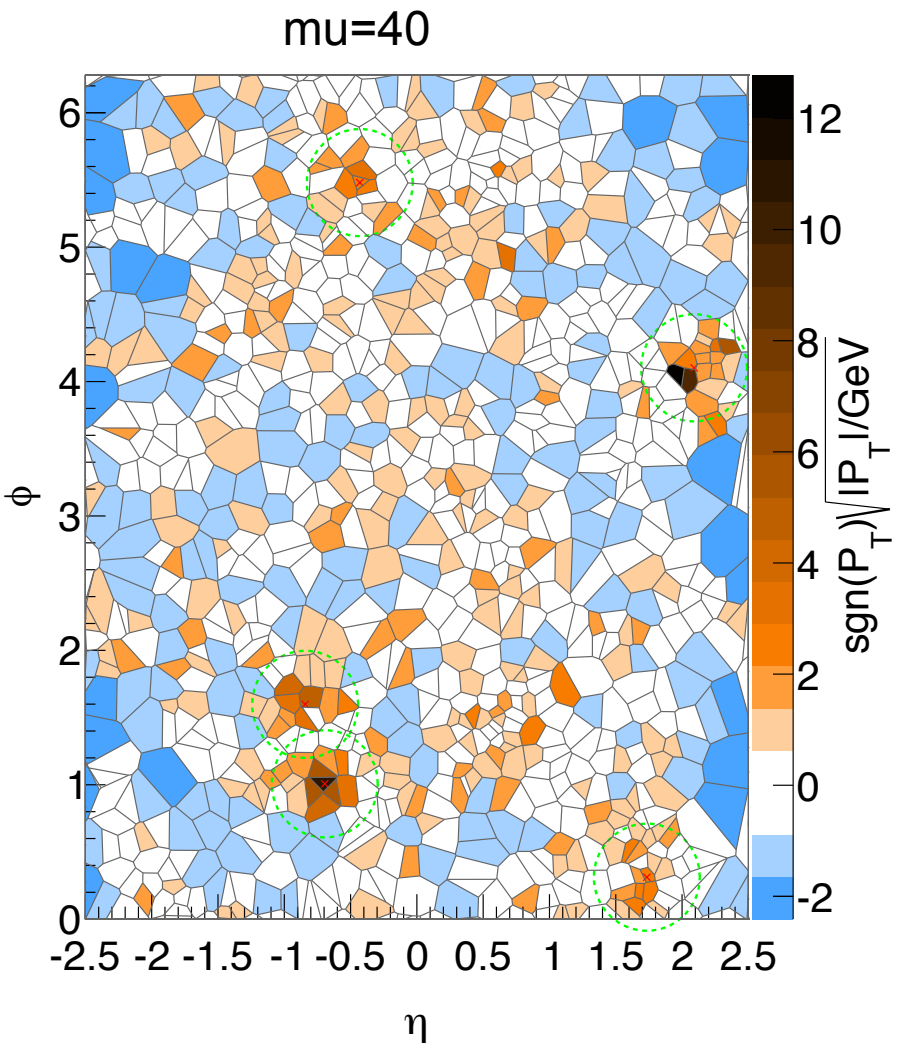
SLAC

- The Voronoi area (x ρ) provide an estimate of the average pileup contribution to the cluster p_T.



Voronoi Area Subtraction

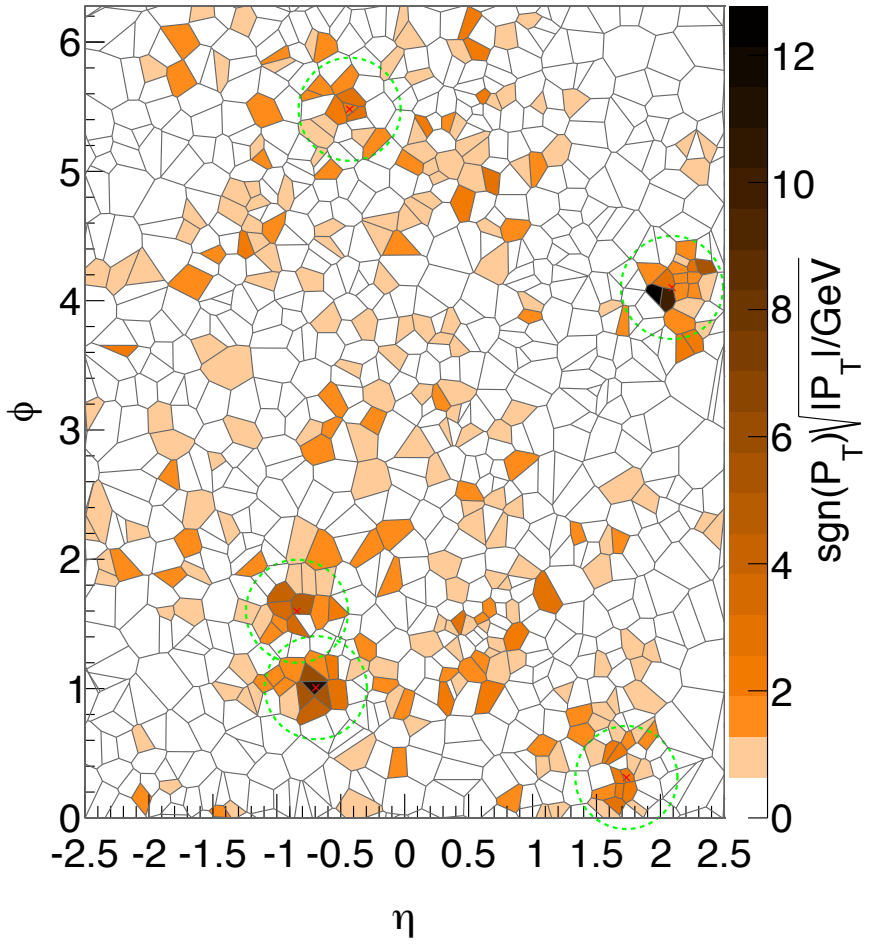
- $p_T^{cluster} \rightarrow p_T^{cluster} - \rho * A^{Voronoi}$
- Subtract average contribution —> positive and negative fluctuations
- Exploring various options:
  - remove negative fluctuations
  - remove clusters with $p_T > \boldsymbol{\sigma}_\rho * \sqrt{A}$
  - spread negative p_T to nearby positive p_T clusters
    - For each negative p_T cluster, cancel out nearby positive p_T clusters weighted by $1/dR^{\alpha}$ up to dR_{max}



Voronoi Area Subtraction

SLAC

negative suppression



spreading