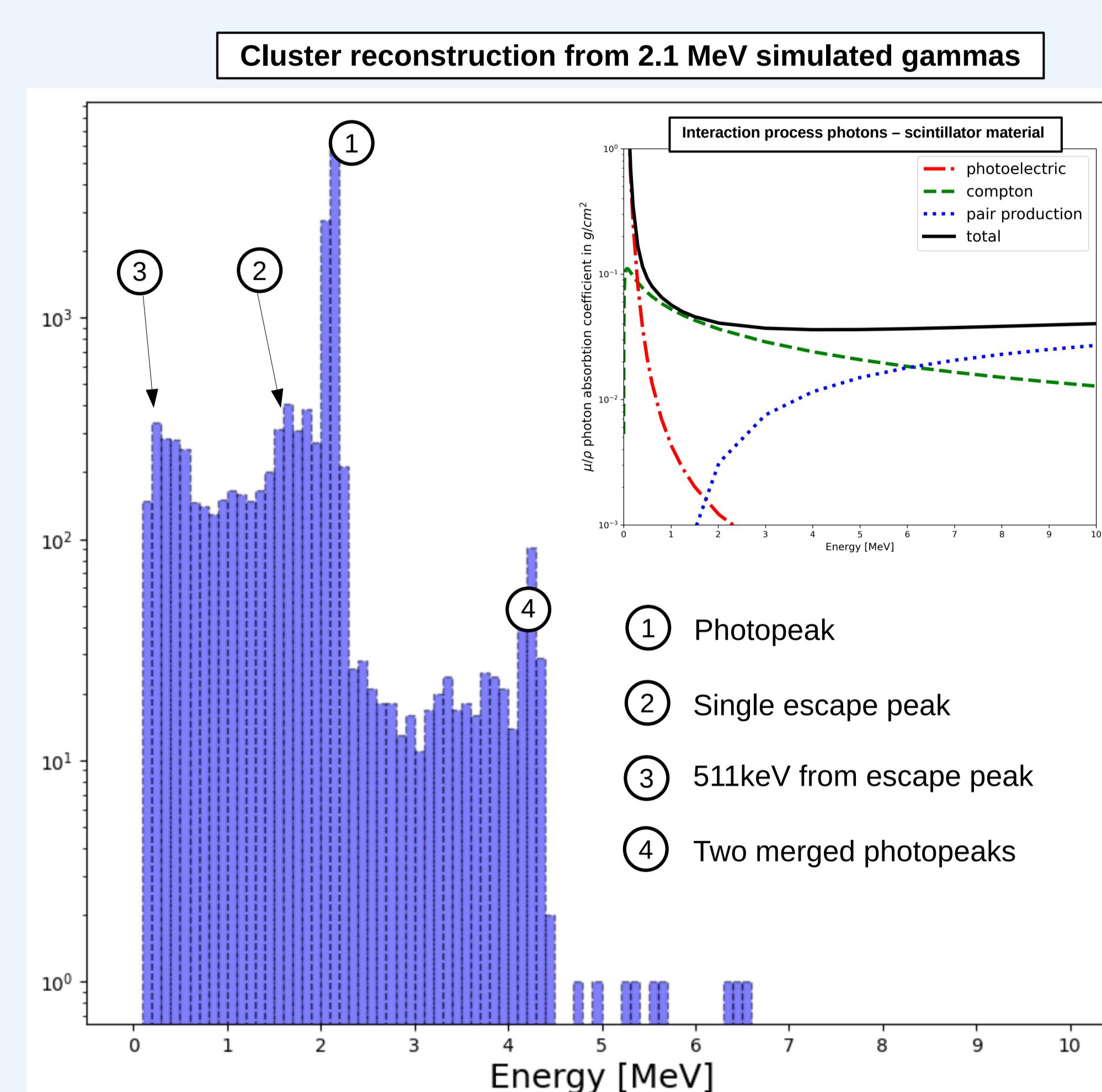
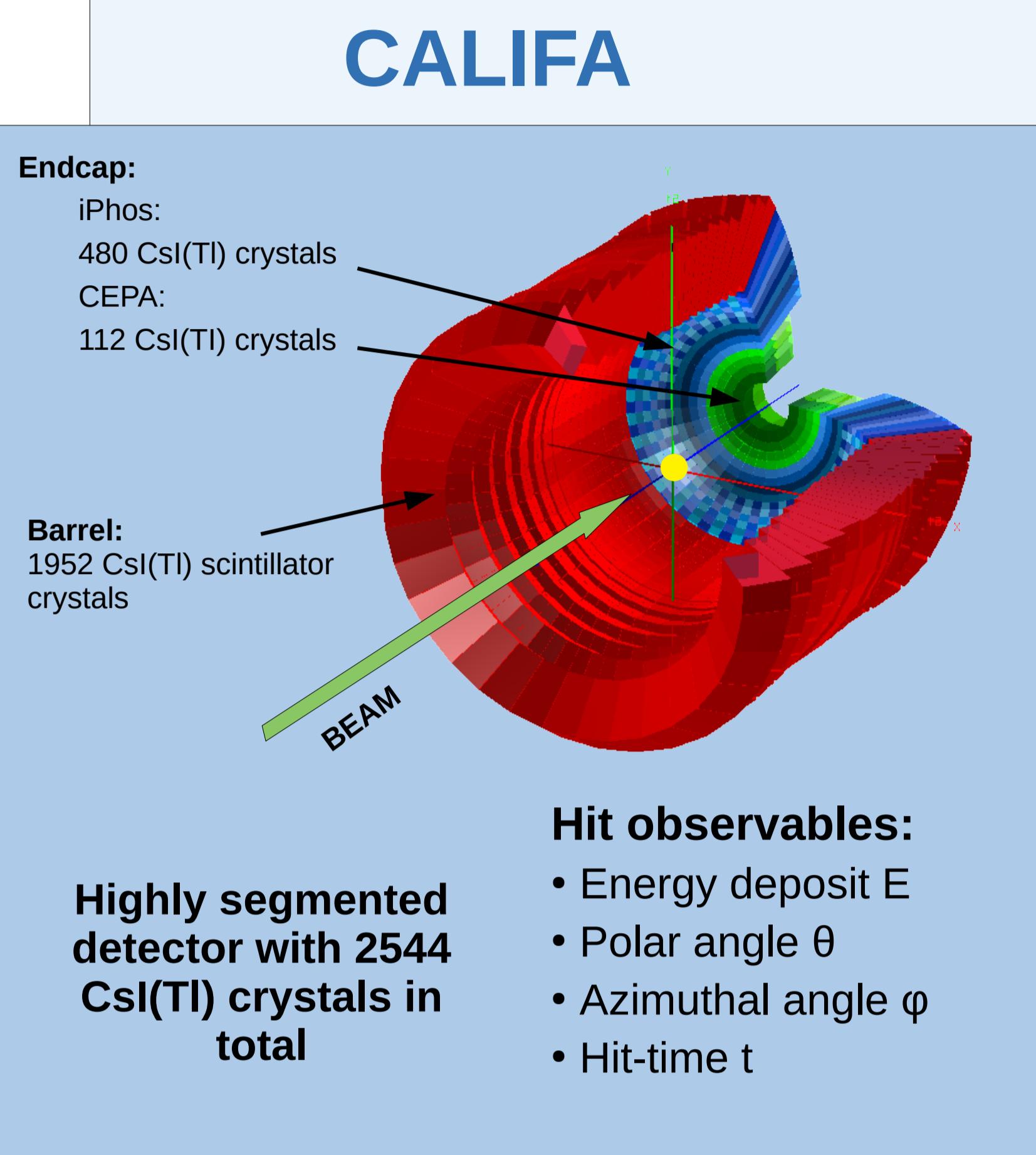
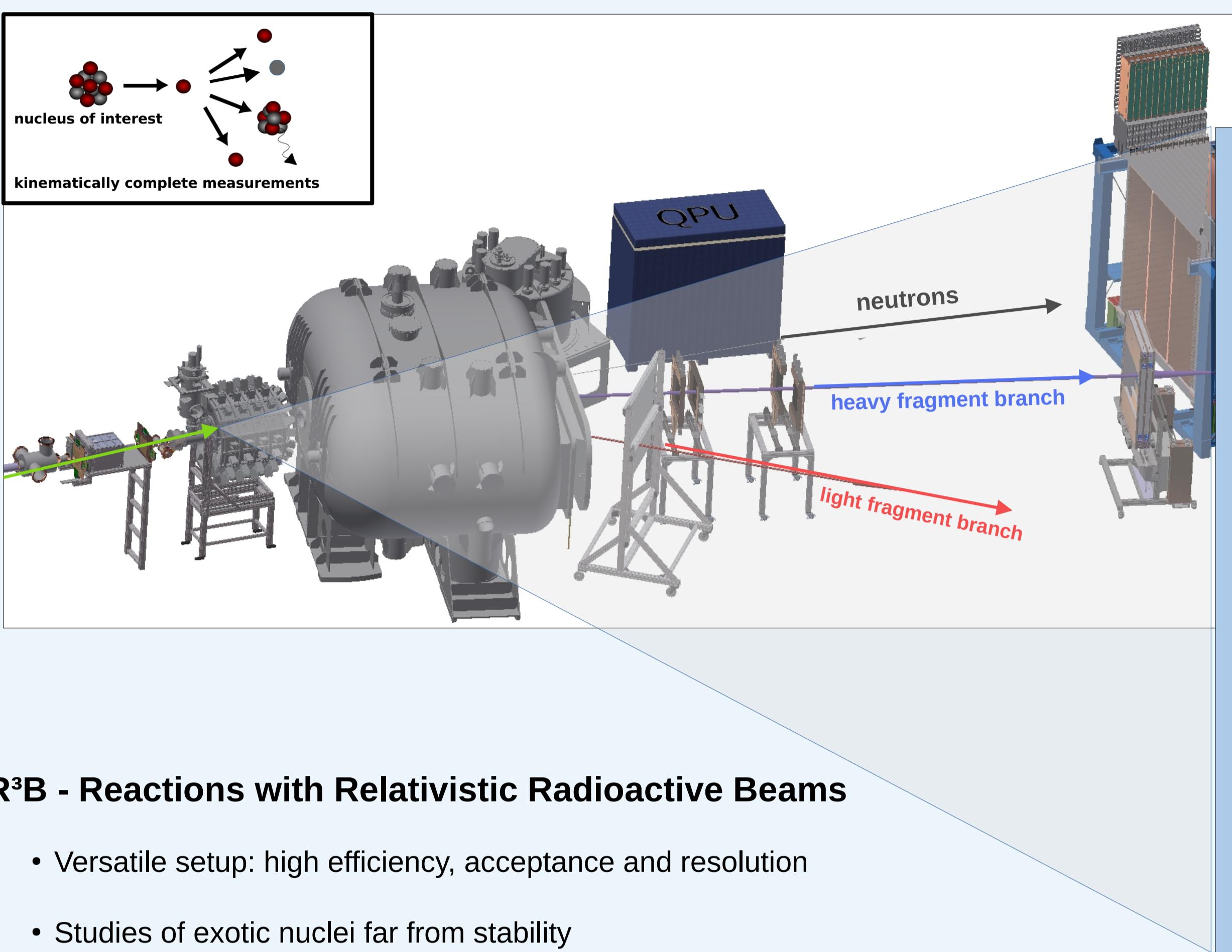
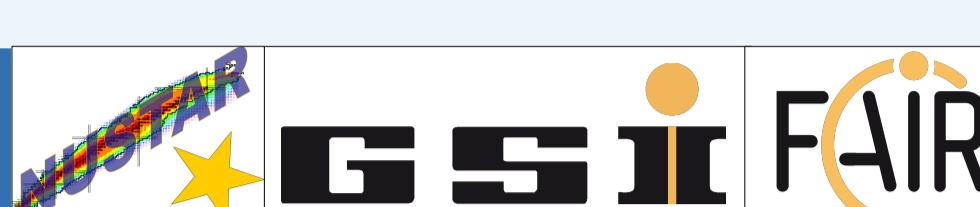


T. Jenegger, R. Gernhäuser for the R³B Collaboration

TUM School of Natural Sciences, Physics Department, E62, Technical University of Munich, Garching, Germany

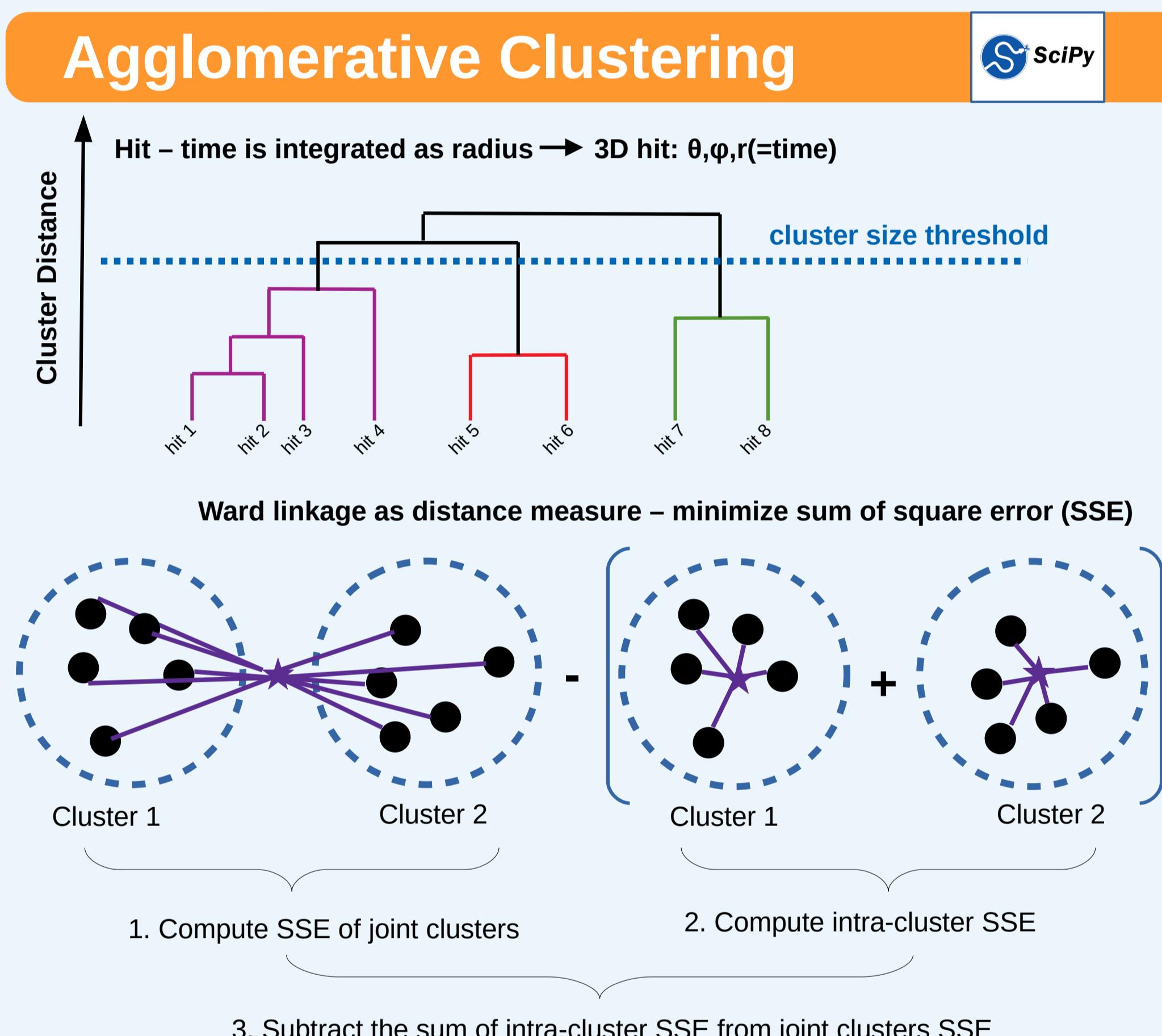
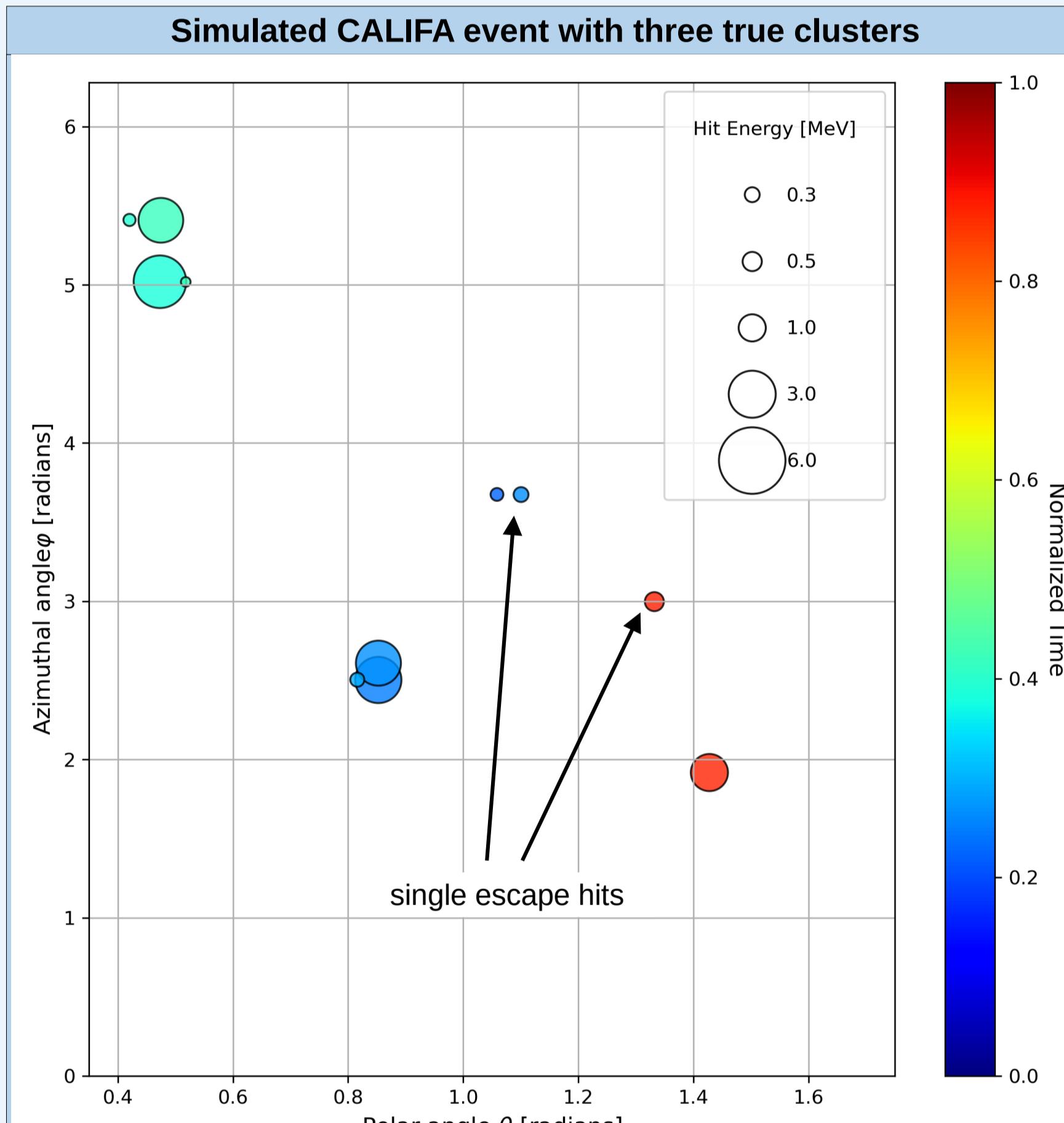
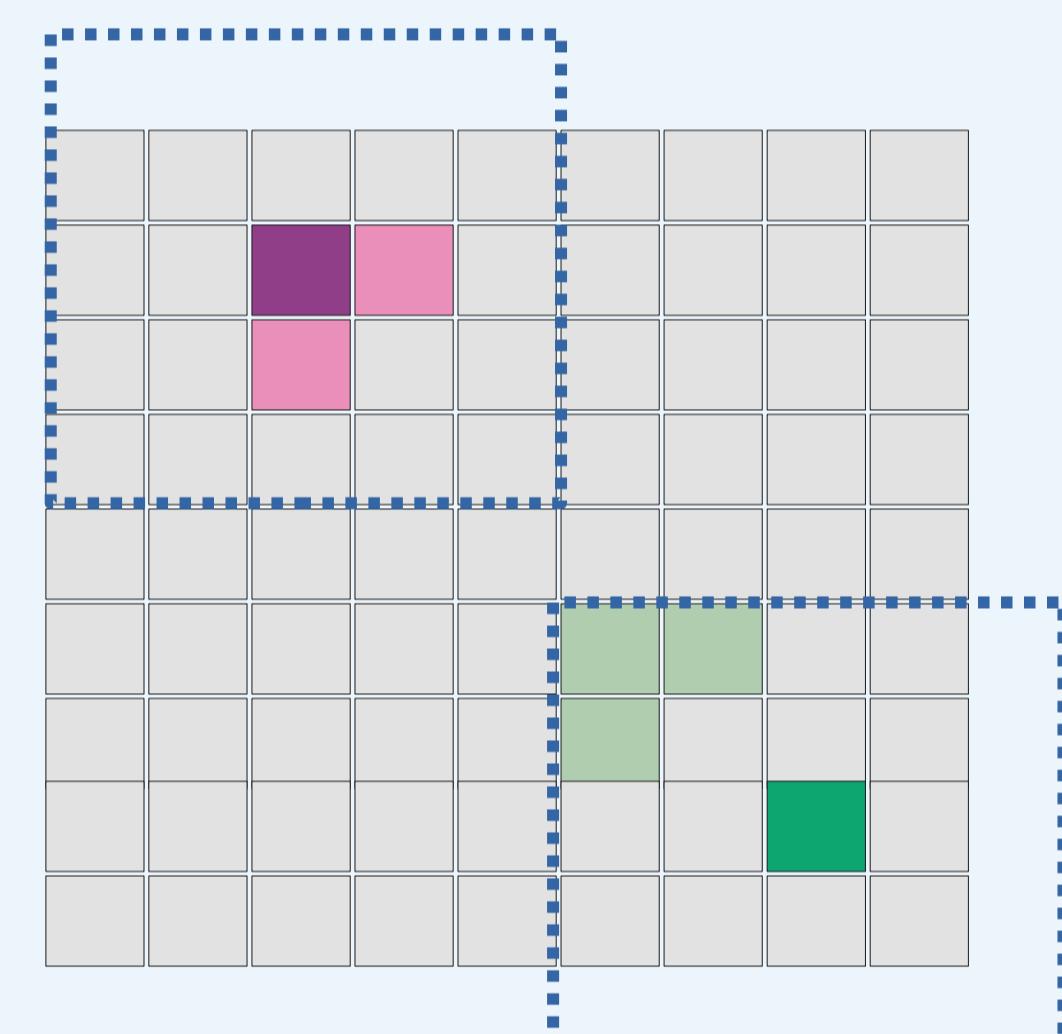
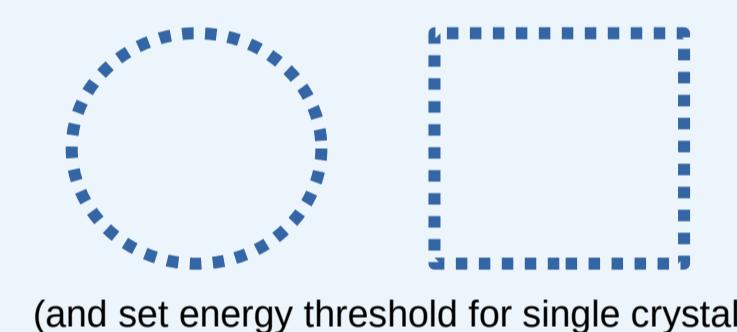
CALIFA – Detection of gammas and light charged particles @ R³B



Standard R3B Clustering

CALIFA Standard Method for Cluster Recognition

User defines shape and size of cluster:

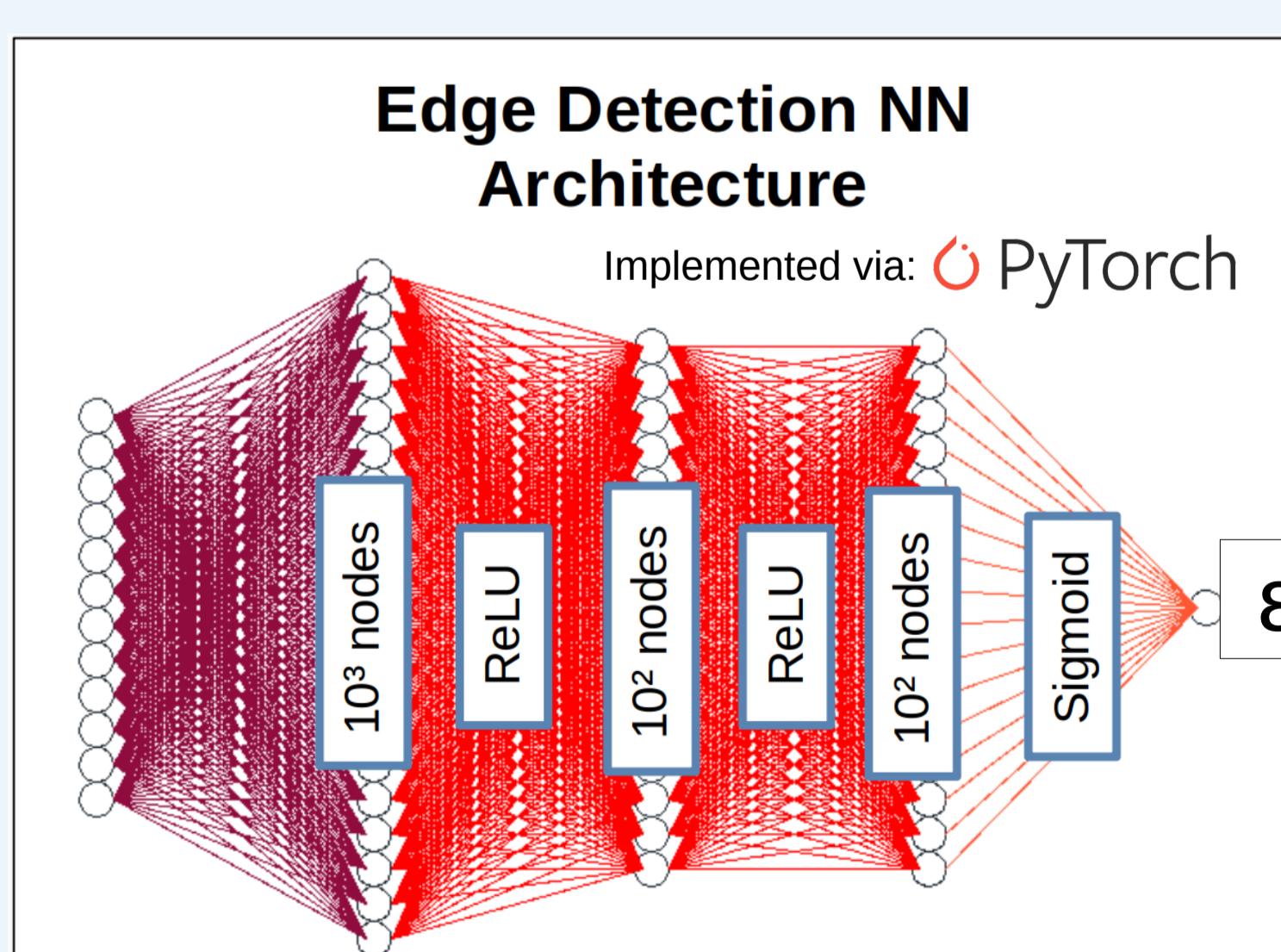


Edge Detection Neural Network

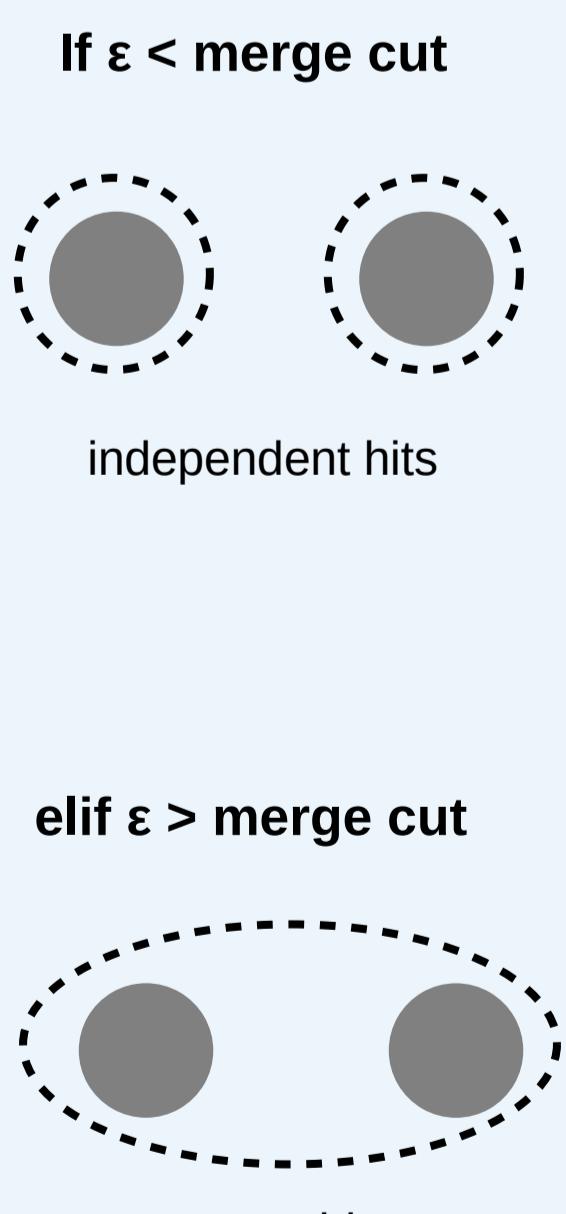
Pairwise hit comparison (i, j)

12 input features:

$E_{ij}, \theta_{ij}, \phi_{ij}, t_{ij}, \Delta E_{ij}, \Delta \theta_{ij}, \Delta \phi_{ij}, \Delta t_{ij}$



Single node output layer with score ε within $[0, 1]$



Various Edge Detection NN models analyzed:

- Edge model without time information
- Edge Model with time information
- R3B + Edge (without time)
- Aggro + Edge (with time)

Data preclustered via Standard R3B Clustering → input into the Edge model

Data preclustered via Agglomerative Clustering → input into the Edge model

RESULTS

