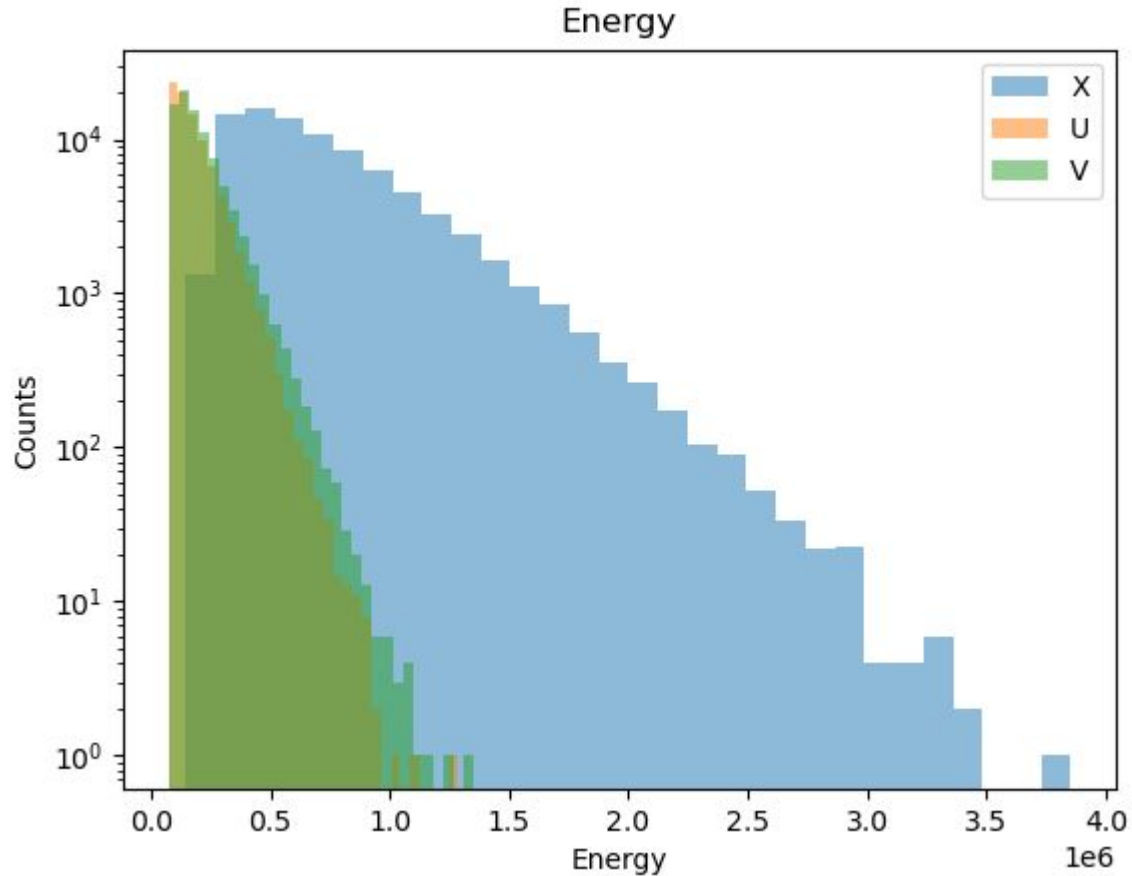# Update
2dpdf fit - energies -
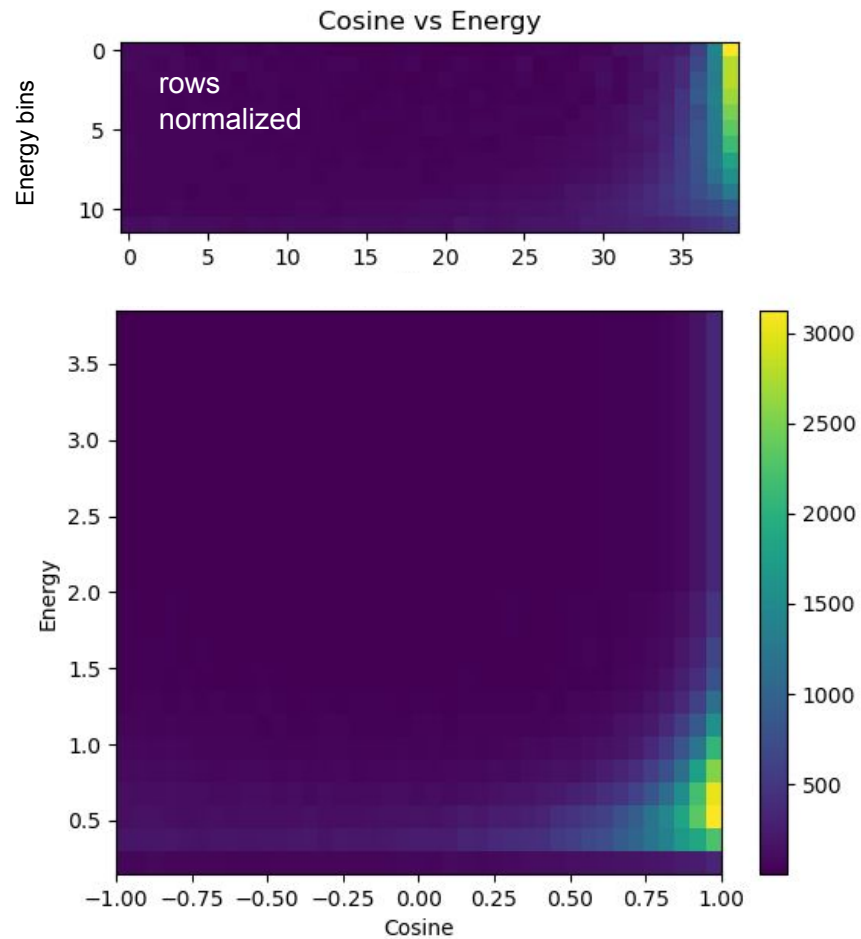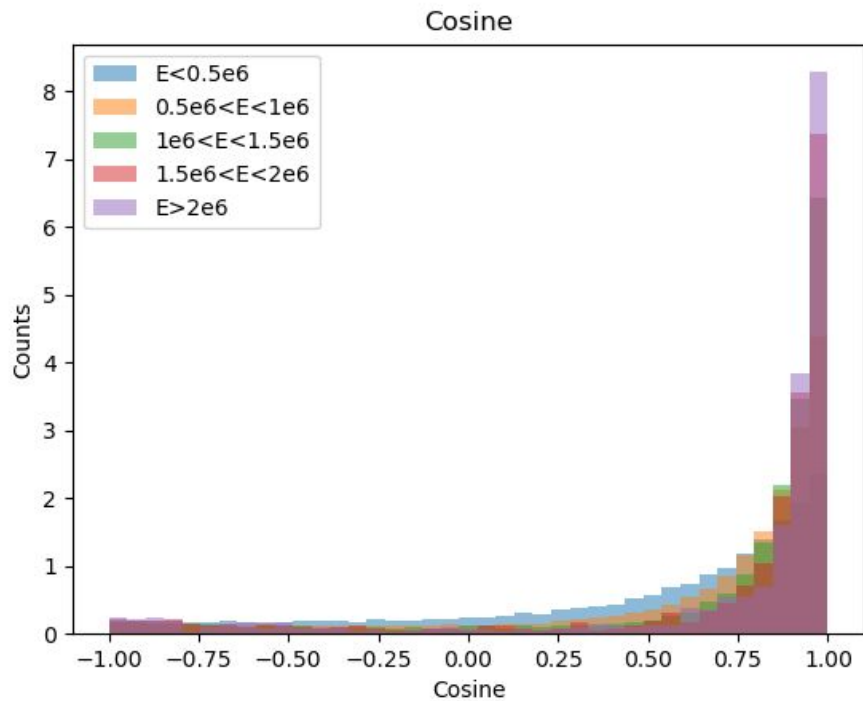
Dario Pullia
dario.pullia@cern.ch

Energies

The total charge distribution of clusters across the planes.

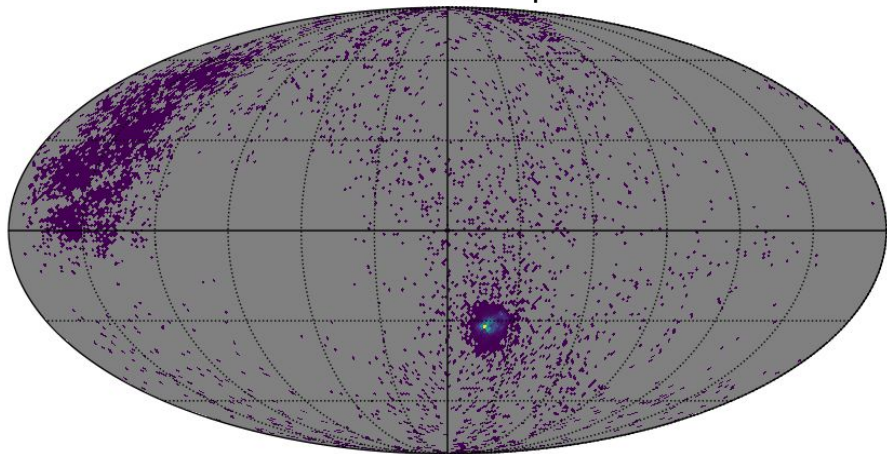Clearly a difference between induction and collection.
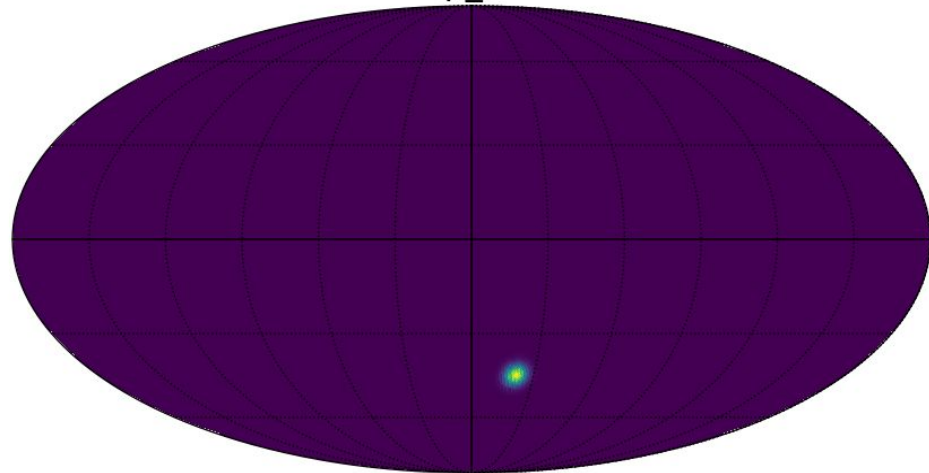
Likelihood with 2d pdf

Likelihood with 2d pdf

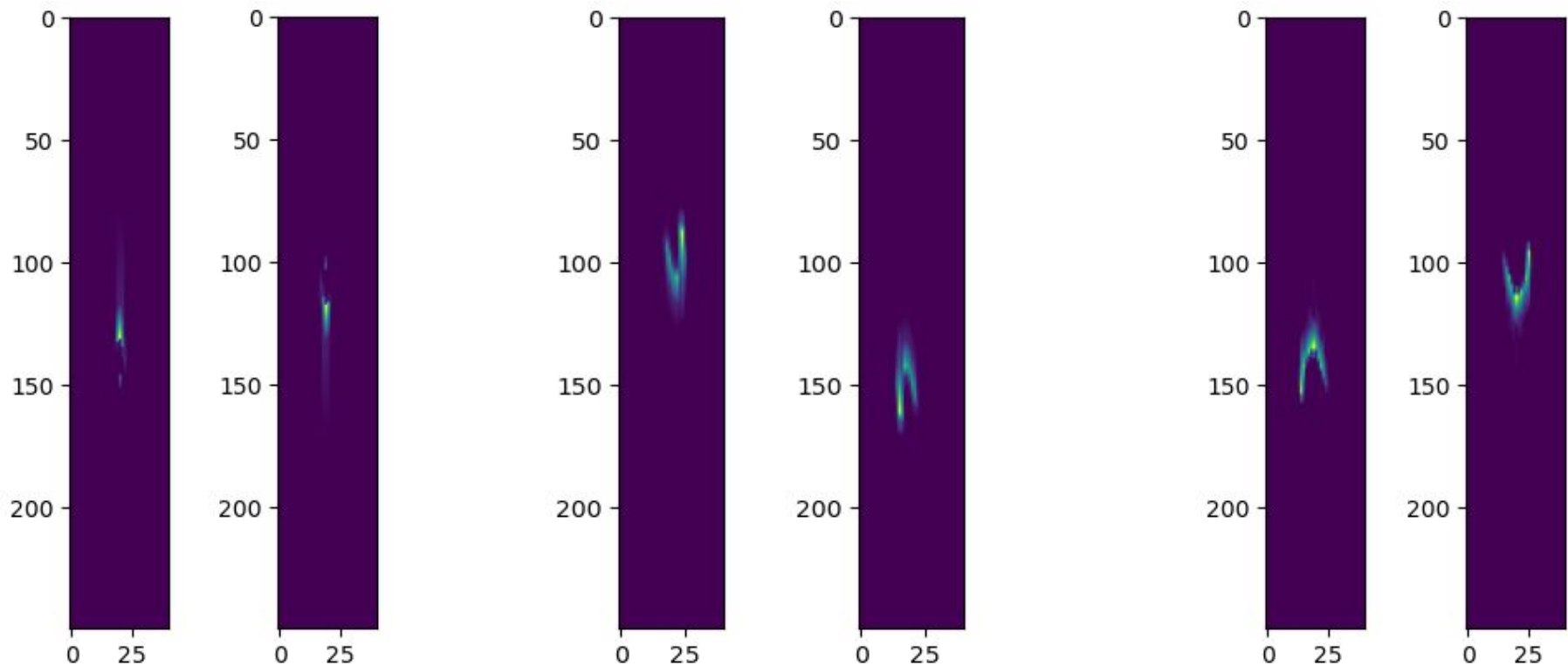Compute the log-likelihood as $log(L) = \sum_i log(pdf(E_i, cos_i))$
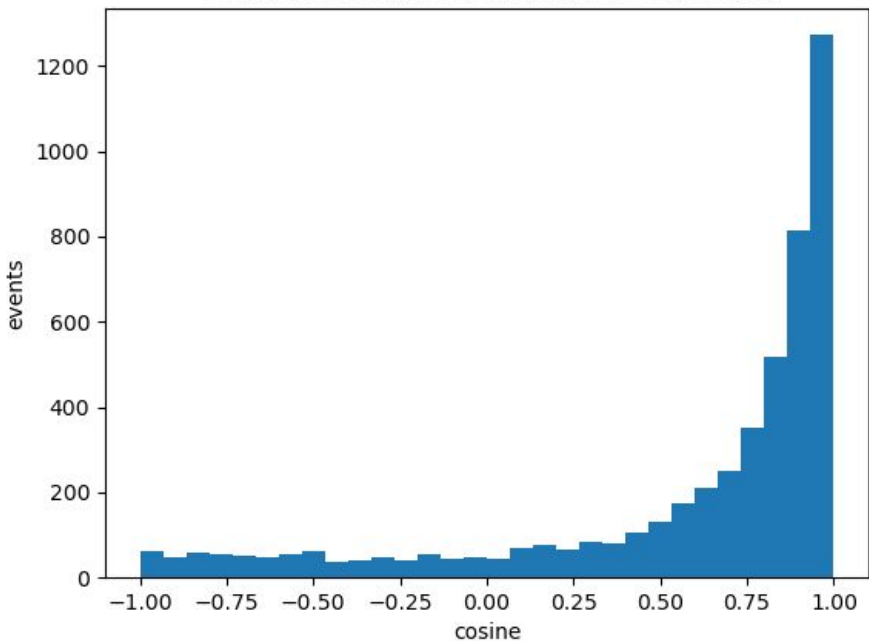

Walkers map

map_true

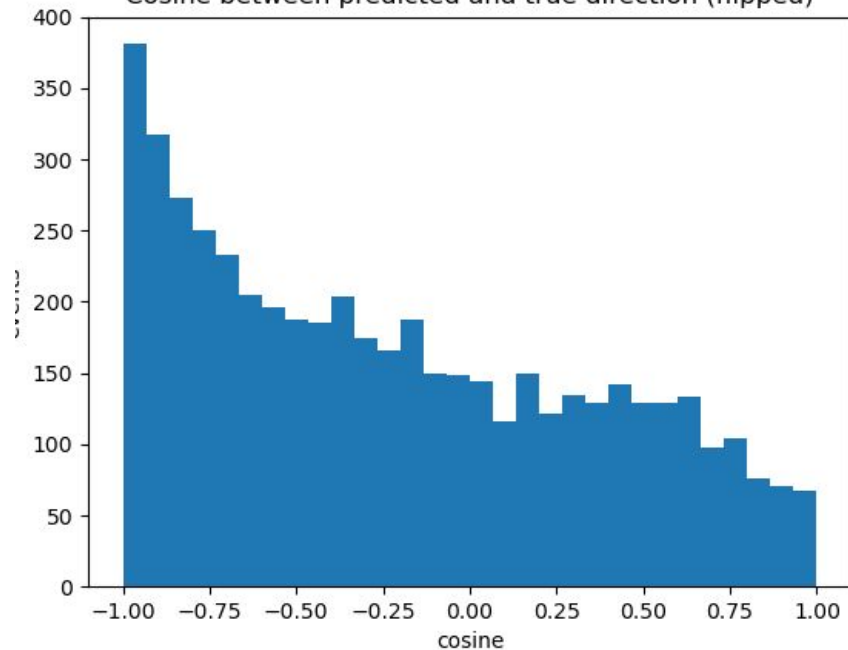# Is flipping a good metric to understand biases? No.

Is flipping a good metric to understand biases? No.
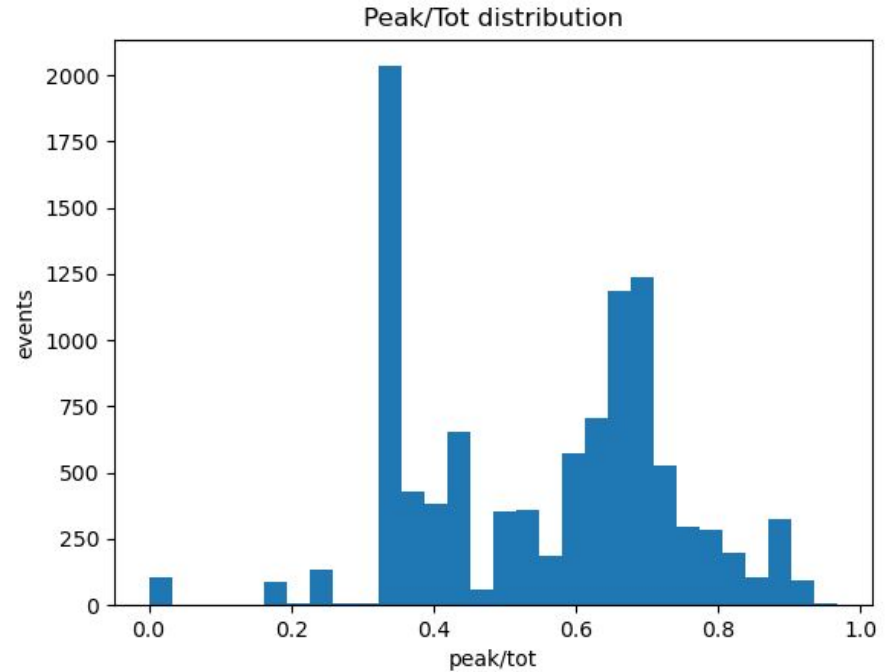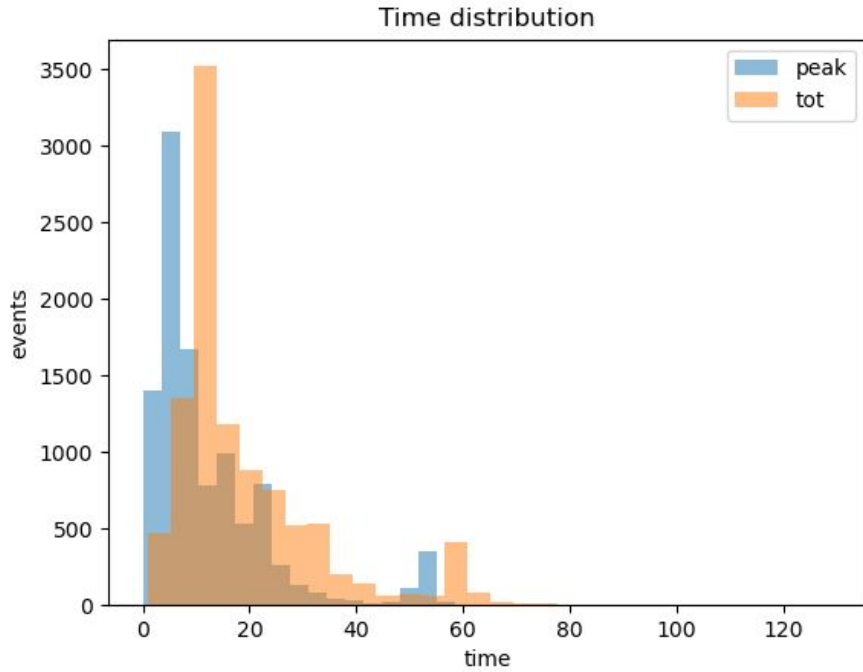

Cosine between predicted and true direction

Cosine between predicted and true direction (flipped)
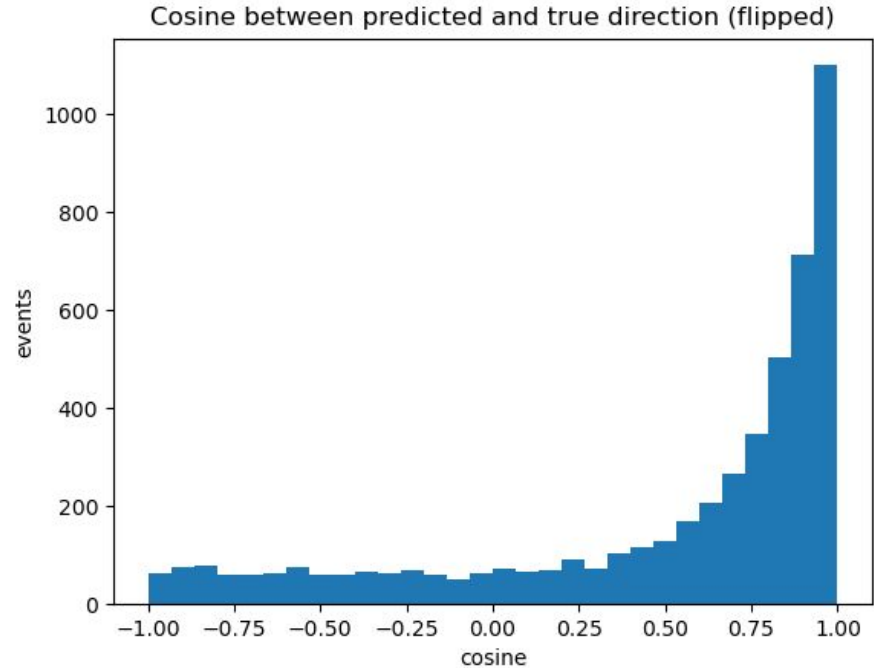
Why? Images not symmetric

Time distribution

Peak/Tot distribution

Flip only the channel axis

Flip only channel axis and change coordinates accordingly.

x -> x

y -> -y

z -> -z

Cosine between predicted and true direction (flipped)

What now?

Next steps? Many options, no clear priority and clear direction.

TODO list:

fix clustering

understand likelihood

fix images for es/cc

try new models (Radi's transformers?)

optimize and/or parallelize clustering

Dario Pullia

Update

Proposal

I would set priorities and goals with deadlines. We can't hope of including everything.

March 2025 ready with a paper?

Goals for the paper:

Resolution studies with high statistics with the full pipeline.

What is hard to include:

- Actual requirements for the implementation hardware-wise
- Real data validation of ML techniques (but super interesting)
- IDK, so many parameters