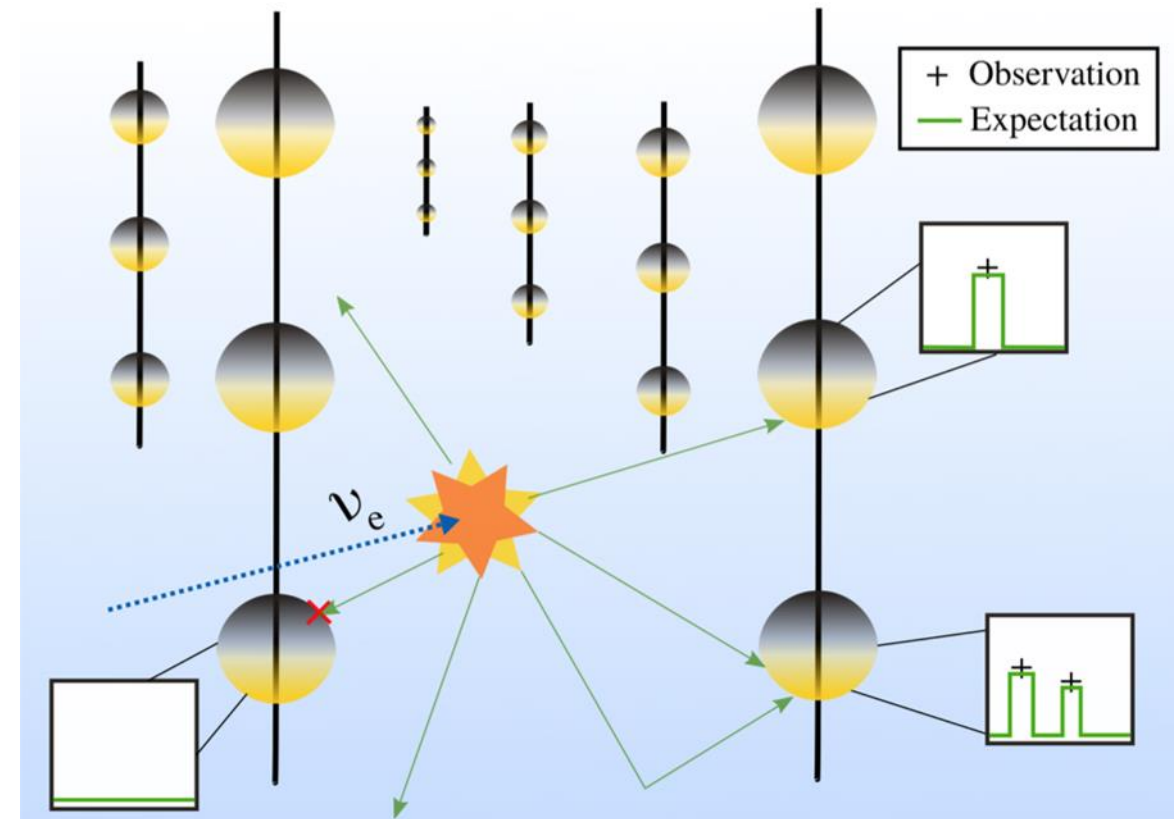# A Quick Update

Kasper Pedersen, Msc Student
IceCube, NBI, 15/01/2021
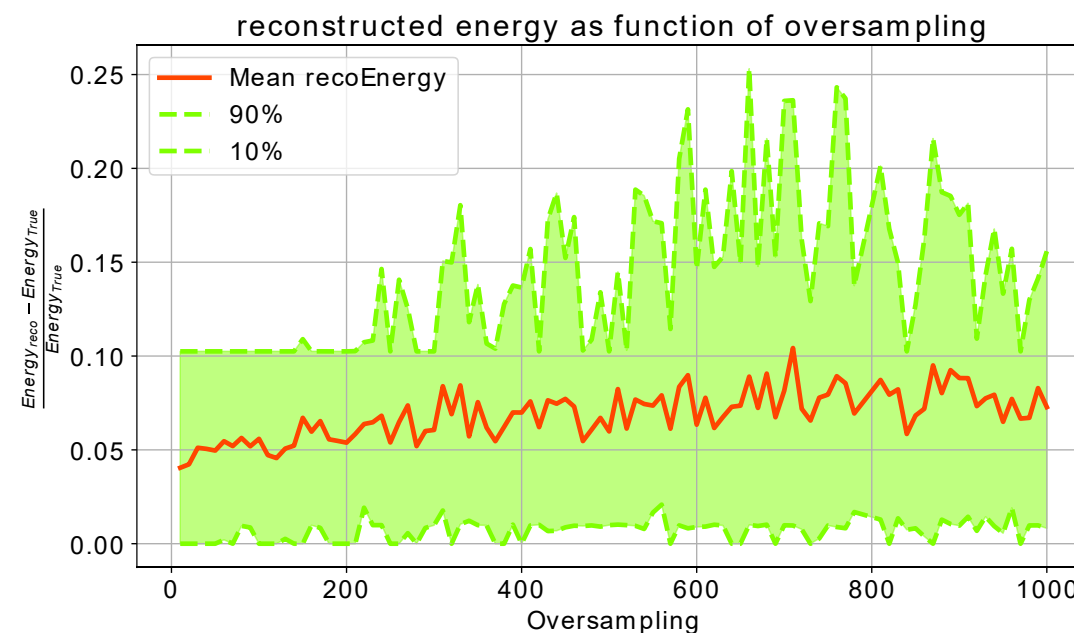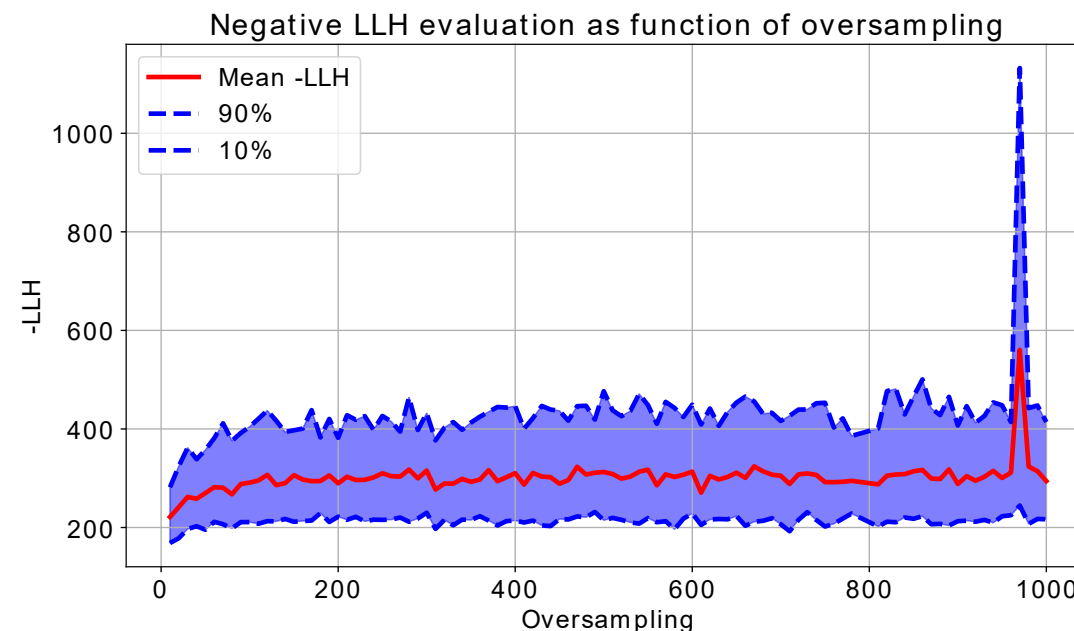
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What am I doing?

- Working on DirectReco
  - On demand simulations
  - Utilises millipede reconstruction

- Why?
  - Table scaling becomes an issue so better solution needed
  - Good in verifying ML reco
  - Reconstruction of small samples where high accuracy and precision is needed
  - Easier to implement and test new ice models etc.

Where am I at?

- Finished preliminary testing of simulation modules

- Now testing/optimizing actual reconstruction

- Have non-expected features testing different oversample values
  - Could be minimizer not moving since using truth as seed
  - Added option to monopod to smear seed if truth is used.
  - Testing this as of now

Negative LLH evaluation as function of oversampling

reconstructed energy as function of oversampling

What's next?

- Find best oversampling value

- Tweak fitting parameters to obtain best accuracy and precision on energy and angular reconstruction etc.

- Optimization of efficiency (speed)

Bonus Slides

Reduced LLH evaluation as function of oversampling

Charge Fit Params vs. oversampling